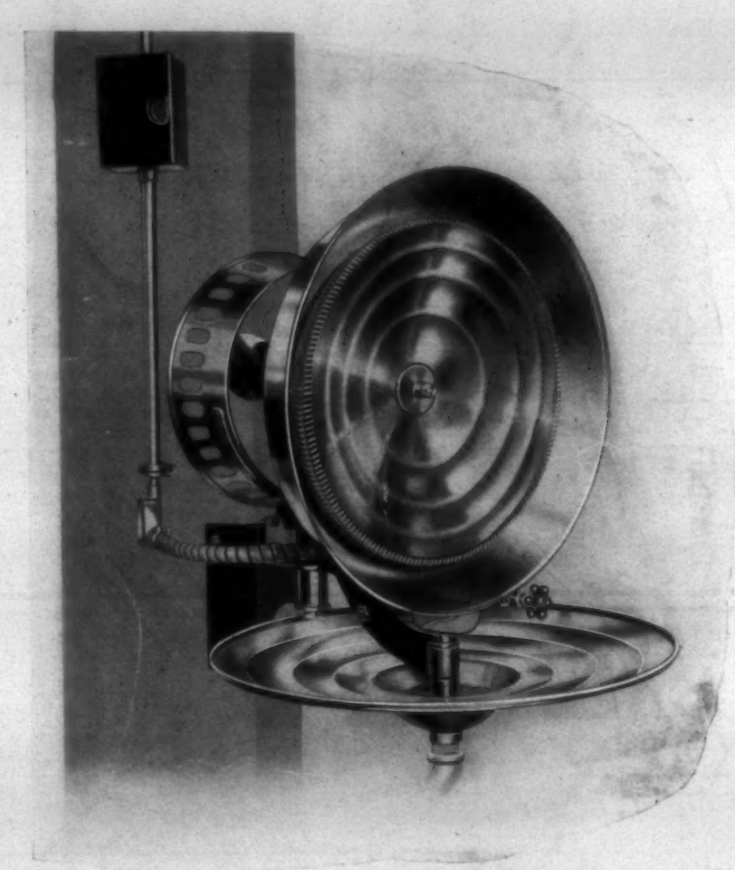
Library
University of N C
Chapel Hill N C

April 26 R
218

Commerce

# SOUTHERN TEXTILE BULLETIN

VOL. 29 CHARLOTTE, N. C., THURSDAY, NOVEMBER 12, 1925 NUMBER 11



## BEHIND BAHNSON HUMIDIFIERS:

The Bahnson Company is an organization of specialists devoting their entire time to the study of humidifying problems and the manufacture of a humidifier that will successfully solve those problems for you. The uniformly high standard of Bahnson Humidifiers is the result of careful attention to all of the details of manufacture. Nothing is overlooked that will add to the efficiency of these humidifiers.

Durability, low upkeep and dependability have been proven by the large number of repeat orders we get from concerns who rank high in the Textile Industry.

In North Carolina alone—our home state—there are more than 4000 Bahnson Humidifiers in operation. Our field is unlimited.

We have built our business on a satisfactory humidifier, and are maintaining it on this basis.

**The Bahnson Company**

**Humidification Engineers**

**Winston-Salem, N. C.** **New York Office: 93 Worth Street**

A PROBLEM has arisen that challenges the serious consideration of our membership ,and that is the need of textile machinery and repair parts plants in the South.

There is no adequate reason why we should be compelled to depend upon plants situated at remote centers which, in the very nature of things, makes for expensive equipment and maintenance of our mills and resulting uneconomic supply and distribution of our products.

Past President C. E. HUTCHISON,
American Cotton Mfctrs. Assn.

**Here's the Solution to Part of Your Problem**

FOR card clothing and reeds today, the South no longer depends "upon plants situated at remote centers, which in the very nature of things makes for expensive equipment and maintenance of our mills."

Located in the very heart of the textile South, the Charlotte Manufacturing Company has a large modern plant devoted to the manufacture of dependable card clothing and reeds. This Company manufactures Cylinders Fillet, Doffer, Stripper and Burnisher Fillet, stocks Top Flat Chains and Emery Fillet, and reclothes Top Flats and rewinds lickerins.

Charlotte Manufacturing Co.
Incorporated 1911
Charlotte, North Carolina

**GENERAL DYESTUFF CORPORATION**
*Successor to* Dyestuff Department *of* H. A. METZ & CO. Inc.

**Alizarine, Diamine
Indanthrene,
Helindon, Hydron**

*and other*

**Colors of Domestic and Foreign Manufacture**

Products of

GRASSELLI DYESTUFF CORPORATION

Plants: Rensselaer, N. Y. Grasselli, N. J.

*Sole Importers of
the Dyestuffs Manufactured by*

FARBWERKE, VORMALS MEISTER,
LUCIUS & BRUNING,
*and*
LEOPOLD CASSELLA & Co., G.m.b.H.

**122 Hudson Street, New York**

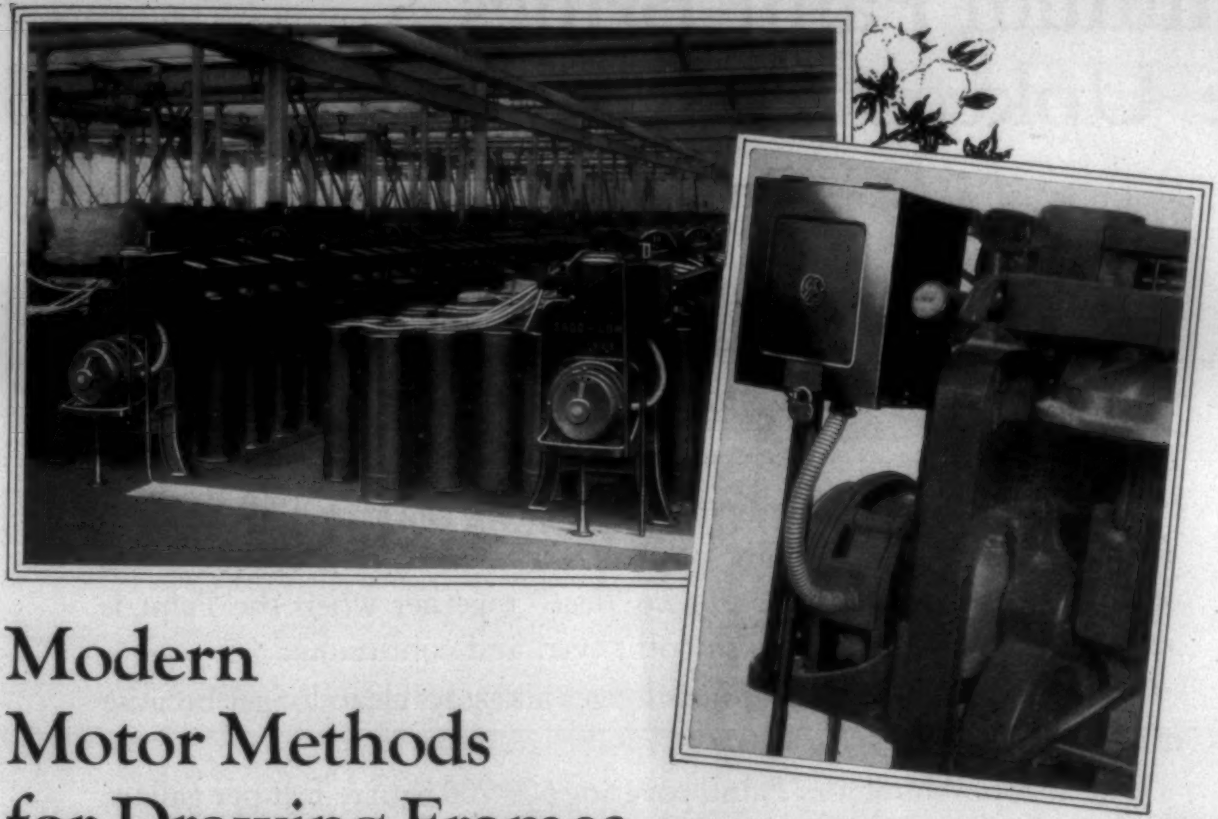
128 Oliver St., Boston, Mass.
301½ W. Trade St., Charlotte, N. C.
132 Chestnut St., Philadelphia, Pa.
449 N. La Salle St., Chicago, Ill.
316 Turk's Head Bldg., Providence, R. I.
20 Natoma St., San Francisco, Cal.

*Young Ideas—*

*THE J.H. WILLIAMS CO.*

*THE SHUTTLE PEOPLE*

***Southern Representative
Geo. F. Bahan,
Charlotte, N. C.,***



Modern
Motor Methods
for Drawing Frames

The modern drive for drawing frames is an individual motor with suitable control for each frame; or a group of frames arranged in line, with their shafts coupled together, and driven by a single motor.

Individual motor drive of drawing frames obtains and *maintains uniform speed.*

In addition, motors mean better working conditions—cleanliness, less noise and confusion, less danger to life and limb.

FITTING THE MOTOR
TO THE MACHINE

*Each G-E Motor, instead of being a make-shift, is designed and built for the special service for which it is recommended and sold.*

7B-23

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN ALL LARGE CITIES

# Aluminum Paint Brings True Upkeep Economy

## —One Coat Completes Interior Jobs

A single coat of Aluminum Paint completely "hides" the original wall-color. It saves the labor and material costs of "under-coats" and "finishing-coats" because it "leafs."

* * *

ALUMINUM PAINT instantly improves lighting and sanitation. Aluminum Powder—the paint pigment—consists of thin opaque flakes of pure metallic aluminum. These "leaf" together when the Paint is applied, giving a coat that is smooth, even and continuous.

The Aluminum Paint coat lasts longer and stays clean longer because of "leafing."

One coat of Aluminum Paint, covering 500-700 square feet per gallon, "hides" the original wall-color as completely as two or three coats of ordinary paint.

Compare the cost of the completed Aluminum Paint job with the cost of jobs done with ordinary paints.

Consider the manifold economies of Aluminum Paint. One coat for inside jobs—one coat "hiding." Lasts longer. Stays clean longer. Reflects good working light that is kind to operatives' eyes.

Yet Aluminum Paint costs no more than less efficient wall-paints. It is the way to true upkeep economy.

Get the complete facts about Aluminum Paint and "leafing" before you award your next painting contract.

Our booklet—"Aluminum Paint"—contains all the information you need. We will be glad to send you a copy upon request.

A.C.
ALUMINUM
O.A.

**Brief Facts about Aluminum Paint**

- —Consists of Aluminum Powder mixed with a suitable vehicle of oil or varnish.
- —Powder made of pure metallic aluminum flakes.
- —Flakes "leaf" together, forming rust-proof, water-proof, weather-proof coating.
- —500-700 square feet coverage per gallon.
- —One coat completely hides original color of surface.
- —Can be sprayed or brushed on.
- —Aluminum Paint is the ideal super-durable protective paint.

# Aluminum Paint

Aluminum Company *of* America
2401 Oliver Building
Pittsburgh, Pa.

*Offices in Seventeen Principal American Cities*

ALUMINUM IN EVERY COMMERCIAL FORM

*Twenty-Second Annual*

**KNITTING ARTS EXHIBITION**

***Auspices***

**NATIONAL ASSOCIATION OF HOSIERY AND UNDERWEAR MANUFACTURERS**

*The ONE "mart" of the Knit Goods Trade*

The convention, meetings, social activities, educational displays, practical exhibits and worth while ideas assure a buying attendance.

Increased sales, better business and an atmosphere of well-being in the trade are the results for exhibiting manufacturers.

The better locations are going fast.
It will be wise to apply at once.

**COMMERCIAL MUSEUM** **PHILADELPHIA, PA.**

*March 22 to March 26*
**1926**

*Personal Direction Chester I. Campbell*

# Women say—

"THE AMAZING thing about the Celanese hosiery and undergarments is that there is so much life in them!"

Full of static electricity themselves, they are delightfully comfortable to the skin.

Also, they react to the electricity generated by the body and cling to the skin as a bit of paper clings to rubbed amber. No other fiber possesses this quality.

This is why, with Celanese hosiery, there is never any bagginess or bulging about the ankles. Celanese hosiery keeps its form, which is the form of the limb it covers.

Celanese, dyed with its special SRA dyes, is fast to sun, soap, salt-water and perspiration. ¶ Waterproof, highly elastic, remarkably durable, with unique hygienic qualities. ¶ Even in a plain fabric no shiners are ever found when Celanese is used.

# CELANESE

Reg. U. S. Pat. Off.

BRAND YARN

*Remember that our dyeing and textile experts are at your service, ready to help you to use Celanese to your profit. Write us today.*

The AMERICAN CELLULOSE & CHEMICAL
MANUFACTURING COMPANY, Ltd
15 East 26th Street, New York

SOUTHERN REPRESENTATIVE: TODD B. MEISENHEIMER, ROOM 1116, JOHNSTON BUILDING
CHARLOTTE, N. C.

WORKS AT AMCELLE (NEAR CUMBERLAND) MARYLAND

CELANESE is the registered trademark, in the United States, of the American Cellulose & Chemical Manufacturing Company, Ltd., to designate its brand of yarns, fabrics, garments, etc.

# SOUTHERN TEXTILE BULLETIN

PUBLISHED EVERY THURSDAY BY CLARK PUBLISHING COMPANY, 39-41 S. CHURCH STREET, CHARLOTTE, N. C. SUBSCRIPTION $2.00 PER YEAR IN ADVANCE. ENTERED AS SECOND CLASS MAIL MATTER MARCH 2, 1911 AT POSTOFFICE, CHARLOTTE, N. C., UNDER ACT OF CONGRESS, MAR. 3, 1879.

VOL. 29 CHARLOTTE, N. C., THURSDAY, NOVEMBER 12, 1925 NUMBER 11

# *Safety Where the Shuttle Flies*

GRAY granite walls had echoed and re-echoed the whirr of spindles and "slap dash" of looms for almost a century in New England's textile mills before accidents came to hold any real significance for the industry. Even after the safety movement was well under way, new textile machinery was being installed in American mills which, from the standpoint of safety, would have been unacceptable in many European countries—despite the fact that the industry's acquaintance with accidents dated back to the introduction of the steam cotton mill and the Jacquard loom, according to an article by George Earl Wallis in "National Safety News" of Chicago.

"We are only on the high spot, hewing away with a broadaxe—but we hope soon to be using finer tools," said a textile representative at the National Safety Congress in 1915. He spoke for one of the progressive New Hampshire companies, and it is interesting to note that only six months had elapsed since his own mill had been organized for accident prevention. Now, many mills are using finer tools, and the industry as a whole is rapidly working its way out of the broadaxe stage.

The textile mill has a mechanical exposure not duplicated in any other industry. For every hundred employees in the average cotton mill, there are more than 350 machines—machines with gears, belts, rolls, pulleys and other power driven parts to be guarded, along with the many special hazards found in each of the 30 different mechanical processes, from the opening of the 30 different mechanical processes, from the opening of the cotton bale to the measuring of the cloth. This condition is equally true of the woolen mill which has a few additional hazards.

By far the greater number of operations in cotton and woolen manufacture have to do with the preparation of the raw material for the looms in the weaving shed. The dyeing of the yarn, the bleaching and printing of the cloth, are processes in which the opportunities for accident do not differ to any extent from those in the drawing and spinning rooms. Furthermore, these operations are not always included in the layout of the textile mill.

The manufacturing operations are entirely mechanical, the presence of operatives being necessary chiefly to watch for broken strands and to replace finished work with new. In the making of unbleached cotton cloth, the 500 pound bale of cotton is first trucked into the bale breaking room. There the bagging is removed and the cotton fed in layers into the bale breaker. This machine loosens up the compressed and matted cotton, removes dirt and foreign matter, and picks the cotton to pieces.

In the modern, well equipped plant, the dirt and dust, extracted from the cotton, are taken away through a vacuum system and the partially cleaned material dumped out onto a conveyor by which it is carried to the breaker-lapper machine in another department. Here the cotton is further cleaned, then passed on in the form of a lap, several feet wide and one to two inches thick, to the finisher-lapper where four laps are combined into one and further clearing done. The drawing out processes begin with the carding machines where the thick lap is combed over millions of fine teeth and drawn out in a filmy web at the other end. A doffing comb gathers this web into a rope, called a sliver, and gives it a slight twist before it passes through a funnel and thence into a can.

Then follows more drawing out and twisting operations from machine to machine, from spool to spindle, to beam and to bobbin until as yarn of specified weight and texture, the cotton is ready for weaving. The various operations and machines up to weaving are termed slubbing, roving, spinning, spooling, conditioning, warping and slashing. The warp yarn, used as lengthwise threads in the finished cloth, after being sized in the slasher, is wound on heavy iron spools or beams which weigh up to 500 pounds each. The filler yarn is put on shuttles ready for the loom.

The weaving is automatic even to the replacing of empty shuttles with new ones without stopping the loom. The only time the operative has to step in, is when a thread, breaking, brings the whole mechanism to a sudden standstill.

The foregoing process is followed in principle in the woolen mill, the chief difference being in the acid treatment of fleece to remove burns and for cleansing purposes.

An analysis of 58 lost time loom accidents in wool spinning and weaving involving 1,685 days by the American Mutual Insurance Company shows:

| Part of Machine | Days Lost |
|---|---|
| Flying Shuttle | 421 |
| Belt and pulley | 417 |
| Gears | 244 |
| Lay and breast beam | 130 |
| Lay and temple | 100 |
| Cut by heddle | 51 |
| Cross roll | 41 |
| Shuttle box | 22 |
| Picker stick | 14 |
| Miscellaneous | 285 |
| Total | 1,725 |

The guarding of all exposed pulleys, gears and belts was the first problem for the safety man in the textile mill. In practically every case, this has meant literally hundreds of guards, large and small. In many of the older mills with equipment difficult of guarding, this work has proceeded slowly, particularly in respect to belts. Newer installations eliminate the problem of belt guarding by the usage of individual motor drives on all machinery. Builders of textile machinery are now cooperating with manufacturers and are re-designing and equipping all machinery with gear guards, plate pulleys, interlocks and other proper protection for all moving and dangerous parts.

While there have been practical limitations of machine design and operating requirements to interfere with the perfect guarding of many a mill, considerable general progress has been made. For small work, castings are frequently used; elsewhere, heavy wire mesh, perforated metal and plain sheet metal, with a preference shown for the latter. The smooth surface of the plain sheet is easier to clean but the other types are preferred as they cut off less light. Expanded metal is seldom used as its rough surface causes lint or "fly," continually in the air, to cling to it.

A common cause of accident has always been the tendency of employees to get their hands caught in fast moving machinery. The high speed beater, picker and carder are recognized as dangerous and interlocking safety devices have been developed which necessitate the stopping of the machine before access to hazardous parts can be obtained. Unexpected starting of a machine has often meant an injury to a fellow worker, oilers and repairmen, especially loom fixers, being frequently sufferers. A home made, effective device to avoid accidental starting is the pin put through a small hole on the shipper rod to keep the belt from slipping off the loose pulley. Interlocking devices applied to hinged gear covers, head end panels, and doors enclosing the differential sections are often used, so operated by the belt shifter that the machine cannot be run if a door or cover is open. This is particularly advantageous in the oiling or repairing of gear trains on spinning frames.

Picking line from moving parts is another source of accident which, on carding machines, has been eliminated in many plants by the use of a vacuum system by which the lint is sucked off the fine teeth on the cylinders. The danger of getting the fingers between the two cylinders, which mesh closely is apparent from the fact that 26 per cent. of the accidents on this type of machine are charged to the cylinder.

Although the spinning mule has been largely displaced by ring frames, it is still found in many fine cotton yarn mills in the Fall River, Mass., and the New Bedford, New Hampshire districts. The mule is an integral part of the woolen mill and is frequently used in the making of hosiery cotton yarns. One-tenth of all days lost due to accidents from mechanical causes in mills where 35 to 40 per cent. of the spindles are of this type, are ascribed to the mule. Many fatalities have occurred when attendants have been caught between the breast beam and the wide carriage. Other causes of accidents are the scrolls, band pulleys and the inevitable gears. While the mule can be guarded so as to make the operation fairly accident proof, more dependence is placed upon strict rules requiring the mule to be stopped on the outward run at cleaning time and permitting no one in the space between the carriage and the beam. A mule completes a draw in 14 to 15 seconds and anyone slipping or tripping while in the danger zone is almost a certain casuality.

Both in frequency and in the

amount of time lost the loom is responsible for one-quarter of the mechanical accidents in the textile mill. While there are more looms than other machines, there are more conspicious sources of injury on the loom than is the rule on other equipment.

The shuttle, its lay in conjunction with other looms, parts and the usual gear hazard, account for nearly 50 per cent. of the lost time. The shuttle flies back and forth through V-shaped threads of warp yarn at the rate of 200 picks per minute. Some form of shuttle guard is used in practically every mill but weavers are still struck by the heavy metal-pointed shuttle as it flies out of control with the velocity of a three-inch shell. In most mills, weavers are instructed to report immediately, any tendency of the shuttle to leave the race. Shuttle screens or targets are frequently put between looms to protect passersby and workers at adjacent machines. Fatal accidents have been caused when weavers, starting their looms, fail to see the repairman at work. Many mills provide fixers with special blocks for use on the shipper handle to prevent accidental starting of the mechanism while it is being repaired.

Because of the peculiar nature of the loom considerable reliance must be placed upon the education of the workers. Teachers of new hands are instructed to lay as much stress upon the dangers of the work as upon the turning out of perfect cloth.

Even the folding machine, where the cloth is made up into department store bolts, has its hazards for the unwary. The predominating accident there is that of operatives being struck by the blade or caught in the jaws. Band guards around the handle of the shipper are coming into use to prevent accidental starting of the machine. Another device, which eliminates accidents from this source, is that which causes the machine to stop only on the back throw of the blade, thus giving ample time for the employee to remove his hands from the place of danger when the machine is accidentally started, or in the regular course of work.

But in spite of the multitude of moving parts in the textile mill, accidents due to mechanical causes are exceeded by non-mechanical accidents as to frequency and aggregate time lost—although the severity in mechanical accidents is naturally greater. An analysis of 2,915 accidents in the cotton industry, involving 63,408 days lost, shows 33.33 per cent. due to mechanical causes as compared with 66.67 per cent. non-mechanical. Five hundred and ninety-three lost time accidents involving 13,531 days lost in woolen mills, showed 47.32 per cent. from mechanical as against 52.68 per cent. from non-mechanical causes.

There are many miscellaneous causes of accidents in the textile mill the elimination of which is found largely in modern methods of manufacture. Blower and belt conveyor systems are coming into use to reduce the hazard found in manual handling and trucking. Overhead carriers are being installed to move the heavy beams about. The use of the fibre spool instead of the wooden type is eliminating lost time due to slivers in the hands and the danger of imperfection. In the carbonizing—burr removing-process in the woolen mill, employees wear rubber gloves and rubber boots in handling the wet wool fresh from the acid bath.

Sanitation and ventilation, along with machine guarding, have been the subjects of the pioneer safety work in the industry. For manufacturing reasons, a relatively high degree of humidity. is desirable This is supplied artificially, the temperature and humidity being maintained by means of gauges at the point which will assure the greatest comfort to employees. Natural ventilation is seldom satisfactory and forced systems are common.

Many mills use color schemes in marking pipes. In the Booth Mills at Lowell, Mass., different colors are used to designate the nine pipe system—steam, canal water, drinking water, fire service, gas, steam vapor, vacuum, water vapor, and compressed air pipes—as a protection to repairmen and other employees.

Thus it will be seen that machine guards are only part of the equipment. Careful, heedful habits of work which lead the possessor away from danger are even more important in the textile mill. The industry as a whole is now directing attention to educating the workman to avoid injury.

In the non-mechanical class of accidents, falls of employees and handling materials rank first as causes of lost time with hand tools next in importance. Floors made slippery by washing, wet floor conditions in certain parts of the woolen mill, oil drippings on the floors, condensation of vapor in the air and worn stairways are contributing factors in falling accidents. Signs, warnings and special instructions to scrubbers, cleaners and maintenance employees are used in the general educational propoganda against this type of mishap.

Statistics compiled by a Lowell cotton mill show that 54 per cent. of all injuries occur to the fingers and hands while another 10 per cent. happen to the forearm. Most of these injuries are caused by slivers from spools, cut from knives, or the jamming of fingers, none serious in itself but all potential infection cases.

One of the first safety organizations in a textile mill was developed by the Ludlow Manufacturing Associates, Ludlow, Mass., in 1914. Their example was followed by many other companies and today we find few mills where employees are not participating in the safety program.

Typical of the safety organization now found in the modern large New England textile plant is that now in effect in the Arlington Mills at Lawrence, Mass. In this mill, every department is represented on some committee by one or more

(Continued on Page 34)

"SONOCO"
CONES, TUBES AND CLOTH-WINDING CORES
FOR ALL REQUIREMENTS

SONOCO PRODUCTS CO., Mfr., Hartsville, S. C.

410 OLYMPIA BLDG.
NEW BEDFORD, MASS.

W. J. WESTAWAY CO., Ltd.
HAMILTON, ONT.

# Flexible as a Belt—
# Positive as a Gear—
# More Efficient than Either

THIS slogan was originated by us in 1911. It has appeared in our advertising ever since, and truly describes the merits of Link-Belt Silent Chain Drives.

In order that you may be assured of receiving genuine Link-Belt, we ask that you "Look for the name on the washers." The presence of this mark of identification is our pledge of quality, service and absolute satisfaction.

LINK-BELT COMPANY
PHILADELPHIA, 2045 Hunting Park Ave.
CHICAGO, 300 W. Pershing Road
INDIANAPOLIS, P. O. Box 85
Offices in Principal Cities

If you have not a copy of our 144-page Link-Belt Silent Chain Price List Data Book No. 125, write for one today. It tells how to select the proper drive and figure its price. Address nearest office.

2419

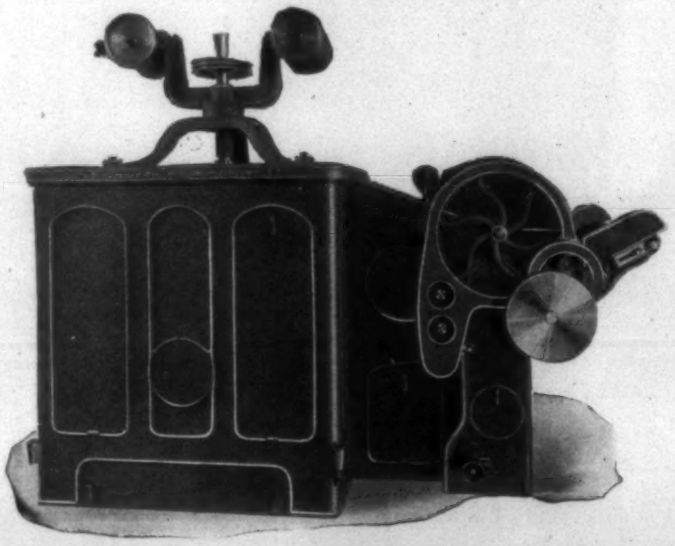
# LINK-BELT

50 THIS YEAR LINK-BELT IS FIFTY YEARS OLD

## SILENT CHAIN DRIVES

COTTON
MACHINERY

WE BUILD A COMPLETE LINE OF
Cotton Opening Machinery
INCLUDING THE
NEW MODEL CRIGHTON
OPENER
With Cage Section and Apron Delivery



The superior cleaning qualities of this type of Opener, for working medium and low-grade cottons, have been recognized by many of the leading cotton manufacturers in this country.

In this machine, the fibre is not subjected to the harsh treatment of beating from the Feed Rolls, and a larger percentage of foreign matter is removed from the cotton than by other methods.

Installations can be made with one, two or three Crightons in a line.

We build these machines with Spiral Gear, Direct Belt or Vertical Motor Drive when desired.

Write for Descriptive Bulletin and List of Users

H & B
American Machine Co.
Pawtucket, R. I.
Southern Office
814-816 Atlanta Trust Co. Bldg.
Atlanta, Ga.

# *Standard Tests for Fast Colors*

THE Research Committee of the American Association of Textile Chemists has been devoting a considerable portion of its energy to the development of standard methods of testing the fastness of dyed fabrics, as well as a system of recording such fastness in more or less specific terms.

At various times attempts have been made to formulate tests and requirements for dyed materials, but the council of our Association was thoroughly convinced at the start that any methods formulated over night, as you might say, and by a committee of men who merely represented the distributing and consuming industry, would be of but little value. It was out belief that standard methods of testing and recording the fastness of dyed textile material must be formulated upon a purely scientific basis, and by technically trained men, and that this could not be accomplished except through research and experimental work extending over a considerable period of time.

While our tests, as published in our 1925 Year Book are not as yet in a form which is absolutely satisfactory to us, they are the result of three years, more or less, of continuous work by our committee, in an endeavor to establish a series of which are primarily scientific and tests and classifications of fastness technical, and yet at the same time adaptable to the practical uses of distributing and consuming interests as well as of the original manufacturers.

We believe that at no time has such a thorough attempt been made to establish, upon scientific principles, a set of tests of this type.

### Investigation of Experts

Our research committee, which has had this matter in charge, includes many of the leading textile and dyesuff chemists of the country. There are the chief chemists of at least eight of the largest textile manufacturing establishments of the country, covering cotton, wool and silk, and in addition a number of prominent dyestuff chemists and the chemist of a number of other textile establishments, and also in addition, one of the leading chemists of the Bureau of Standards, all of whom are contributing their best thoughts and endeavors.

Through the appointments of subcommittees on special phases of fastness and through the regular monthly conferences of this committee, we believe that there has been secured the services of a group of men, many of whom could not have been engaged at any remuneration to have put their time and thought into this matter as they have, except in an endeavor to support this important activity of our association and contribute their part toward the advancement of a scientific and technical side of the textile industry.

These tests as formulated up to the present time will be found together with the report of our Research Committee on Pages 55 to 87.

### "Fastness to Light"

Our method of "Testing to Fastness to Light," has not fully been developed as yet, even in a tenative way, although our committee probably has spent more time and thought and done more experimental work toward the development of this particular phase of our work than any other. The complications which are met when one makes a scientific study of light fastness in an attempt to standardize and record accurately such fastness appear to be almost insurmountable. The committee, however, have this matter well in hand, and it is believed before another Year Book is published that something more definite can be presented along this line.

In order to still further satisfy ourselves that these tests will work satisfactorily when carried out by different interests, and also in order that they might be revised and improved if necessary, we are at the present time submitting a set of dyed samples to no less than 10 outside testing agencies, selected so as to cover textile manufacturers, textile and dyestuff distributing interests and ultimate consumers, with the request that they criticize these methods from the point of view of their experience, and also make suggestions as to how they believe they may be improved.

### Constructive Criticism Wanted

Thes criticisms and suggestions will be finally considered and the resuls of individual testers carefully compared. With all this information at hand, it is believed that our standard methods may be put upon a more permanent basis, and in this final form we are hoping that they will be adopted as the standards for reference in this country, for just the purpose for which there appears to be such a demand at the present time.

As previously stated, one of the members of our Research Committee, Wm. D. Appel, is a chemist of the Bureau of Standards, and in this way our association and the Bureau of Standards are cooperating and it is believed that our standards and methods of testing are being formulated in such a way as to be not only acceptable to, but advocated by, the Bureau of Standards as the methods best adapted to the American textile trade.

We have been handicapped to a great extent, due to lack of funds to carry on the labratory and experimental work necessary for the formulation of these tests. It has been necessary to call upon individual members of the committee to conduct much of the work in their own laboratories, at such times as hey were able to do so. This has not been wholly satisfactory since it delays to a considerable extent the time at which we can hope to have these tests perfected.

For some time the research committee of our association has realized that we must have the services of several high grade chemists, devoting their entire time to this work, under its direct supervision. In order to accomplish this, considerable financial assistance from outside

(Continued on Page 35)

HOUGHTON

# A BIT OF HISTORY

*by Chas. E. Carpenter,*
Near Editor

E. F. Houghton & Co. were established in 1865, for the purpose of manufacturing oils and greases for use in the industries.

In 1896, owing to my personal friendship with the late Hon. Robert H. Foerderer, the most successful leather manufacturer of all time, mechanical leathers, including belting, packings, mill strappings, etc., were added to the Houghton Products.

During this long period the Houghton Research Staff has not been permitted to scatter its energies. Many products have been suggested from time to time, which were outside of the fields of oils and leathers, but as regularly as they have been suggested they have been vetoed, because it is the Houghton policy to concentrate, rather than scatter applied research energy.

The Houghton Research Staff is not composed of men who wear whiskers of the goat variety; tortoise-shell glasses; use high sounding words and unintelligible conversation, but on the contrary it is dominated by practical mill men, such as read this advertisement.

The Houghton Research Staff does not aim to tell a mill man how to run his business, but merely to help him.

Write plainly your name; address; the mill at which you are employed; the position which you hold, and the kind of goods your mill makes, and we will send you *The HOUGHTON LINE* every month and it will be a source of much amusement and instruction to you.

Address:

**E. F. HOUGHTON & COMPANY**
***Department of Publicity,***
**P. O. Box 6913, North Philadelphia, Pa.**

*Distributors Located At*

ATLANTA, GA.
1001 Healey Building
Phone: Walnut 4807

GREENSBORO, N. C.
P. O. Box 663
Phone: Greensboro 1990

GREENVILLE, S. C.
511 Masonic Temple
Phone: Greenville 2316

ST. LOUIS, MO.
418 N. Third St.
Phone: Olive 3559

*AND IN EVERY OTHER TEXTILE MANUFACTURING CENTER OF THE WORLD*

*Oils and Leathers for the Textile Industry*

# *Efficiency in Dyehouses*

Efficiency in a dyehouse is essential at all times, but it is especially so at the present time when competition is so very keen and the difference of a small fraction of a penny per yard determines most contracts. It depends to a great extent on efficiency in organization, labor use of modern methods and machinery, an dtechnical supervision and control. One generally finds hat if a works is modern in its processes an dmachinery, then the organization is comparable with it; office methods, such as are necessary for the handling of large quantities of different kinds of yarn and cloth are given careful attention and consideration, the transport and passage of the cloth through its successive processes is organized in such a manner that it has the least amount of handling and has to be carried the smallest distance, and every effort is made to place the right man in the right job. The question of labor depends chiefly upon the conditions prevaling in the dyehouse, and if modern methods and machinery are used then the labour involved tends to be more economical and specialized, thus giving more efficient results.

In most mills, however, the weak place is to be found in the technical supervision and control which is necessary for carrying on the usual routine progresses and also for doing research and keeping up to date with all improvements in those processes; most firms are steadily realizing this and have a chemist directly in charge of all the technical part of the work. He usually has trained foremen under him, who are each responsible to him for a branch of the work, and by this means he is relieved of the routine work to a large extent, thereby giving him opportunities of carrying out investigations into any problems which may arise. By such a system it is possible to maintain accurate supervision of each process, the responsibility for faults and unsatisfactory work can be traced, and routine processes can be standardized and carried out automatically.

In the actual dyeing and bleaching processes the problems of steam power and water are important and expensive items. The coal necessary for the production of steam should be considered carefully and the chemical analysis should be the deciding factor in the choice of any particular kind. From an analysis giving the percentage of ash, calorific value and coking power, much useful information is obtained, but the value of this is lost if it is not ascertained that the stoking of the boilers is efficient. It is worthy of note that steam accumulations are now on the market, and this invention is of great value to a dyer who requires a large quantity of steam early in the morning and for the remainder of the day uses much less. The initial cost is rather expenive, but the economy is very considerable and is worthy of the consideration of any firm whose steam requirements are irregular.

For the power required for a dyehouse, steam engines have long had preference owing to their simplicity, but they are now being replaced by crude oil engines, which are more economical to run at the same time are reliable and easy to maintain.

Technical supervision of the water supply used for the various processes is very necessary, and in some works it is considered to be so important that a daily analysis is made to test for those factors which are known to influence and affect the processes and materials.

The degree of hardness of the water should be ascertained, and if this is found to be appreciable it should be corrected by softening. If this latter is not done, then the lime or magnesium salts react with soap and are liable to be precipitated on the cloth, giving uneven results in the dying, besides the actual loss in soap which occurs; further, the presence of carbonates in the water is liable to cause trouble owing to their property of precipitating certain dyestuffs, in which case the dyestuff is not fixed on the fabric and stains caused through rubbing. In dyehouses in which quantities of silk are dyed, and consequently much soap is used, this softening of water is an important question.

Besides the points which have been considered above, it is also necessary to examine the chemicals used in the various processes. This also was formerly a portion of the work which was entirely neglected, but nowadays most firms are realizing the value and necessity of it. If standard results are to be obtained, the chemicals used must be of a known quality. For bleaching, the bleaching agent should be tested regularly for he available chlorine content, and from this information an accurate amount of bleach can be used for a definite operation. Soap should be tested for the amount of moisture present, the fatty acids and total alkali, and these figures are of great value when buying soap or when comparing them as to their value for a specific purpose. For silk it is advisable to carry the analysis further and to test fr subsances, such as resin, cotton-seed oil, etc., which have a deterious effect in degumming. Mordants and fixing agents should also be analysis further and to test for subquick tests which are of great service with regard to all such techni-

(Continued on Page 26)

DUPLAN
SILK CORPORATION
COMMISSION DEPARTMENT

*Have*

DUPLAN

*WARP Your*

RAYON

*New York Office*
135 MADISON AVE.

*Southern Office*
JOHNSTON BUILDING, CHARLOTTE, N. C.

*Mills at*
HAZLETON—DORRANCETON—NANTICOKE, PA.

# April 12 *to* April 17
# 1926

*Mechanics Bldg.* *Boston Mass.*

# INTERNATIONAL TEXTILE EXPOSITION

## An Invitation to the Textile Trade

**The Officers and Directors**
of the
**Textile Exhibitors Association, Inc.**
extend a cordial invitation to the
**Textile and Allied Trades of the World**
to exhibit at the
**INTERNATIONAL TEXTILE EXPOSITION**
to be held in
**BOSTON, MASSACHUSETTS**
**from April 12 to April 17, 1926**

**Directors**

F. H. BISHOP, of the Universal Winding Co.
CHESTER I. CAMPBELL, Secretary and Treasurer.
CHARLES A. CHASE, of the General Electric Co.
GEORGE P. ERHARD, of the Stafford Company.
F. J. HALE, of the Saco-Lowell Shops.
EDGAR F. HATHAWAY, of the Shawmut Engineering Co.
F. W. HOWE, of the Crompton & Knowles Loom Wks.
L. M. KEELER, of the Whitin Machine Works.
S. F. ROCKWELL, of the Davis & Furber Machine Co.
W. I. STIMPSON, of the Draper Corporation.
LEWIS E. TRACEY, of the Lewis E. Tracey Co.

**PERSONAL DIRECTION** **CHESTER I. CAMPBELL**

*Under Auspices of the*
*Textile Exhibitors*
*Association Inc.*

*Address All Communications*
*to the Executive Offices*
*329 Park Sq. Bldg. Boston*

# *Why Cotton Mills Have Been Moving South*

### By Richard Woods Edmunds

**Richard Woods Edmunds, writing in the Boston News Bureau, of Boston, Mass., recently presented a series of articles dealing with the movement of cotton mills from New England to the South. He covered the subject so thoroughly and with such keen insight into real conditions in the South, that we secured special permission from the Boston News Bureau to reprint his articles.**

**Because Mr. Edmunds handled this subject in such an interesting and authoritative manner, we believe that his articles will be read with interest and appreciation by all Southern mill men.—Editor.**

By Richard Woods Edmonds.

When I was traveling in New England last winter trying to find out what New England cotton mill men think of the southward trek of their industry I was told without exception that the three chief factors responsible for this southward movement are lower wages, longer working hours, and lower taxes in the South. There was no difference of opinion that lower wages was the greatest factor of them all, while longer working hours came second. When it is realized that the final cost of the finished goods in New England is something more than 25 per cent wages, it is evident that if the mills could cut their wages 35 per cent and at the same time add seven hours per week to the working time of their machines, they would be enabled to meet a competition that has been proving ruinous to many of them.

Eighty-five per cent of the southern spindles are in four States, Alabama, Georgia, North and South Carolina. The average wage paid for the year 1923 to workers in the cotton mills of those States, according to figures given me by the National Association of Cotton Manufacturers and compiled from United States Department of Commerce reports, was only $644. The same table shows that the average year's wage paid to cotton mill workers during the same year in Massachusetts and Rhode Island, the two chief cotton mill States of New England, was $1,025. The Southern yearly wage was therefore about 37 per cent below that of the New England wage. In some of the minor Southern textile States the year's wage was even lower, that for Mississippi, with 178,508 spindles, being the lowest, $533. However, when it is considered that Alabama in the same year, 1923, had 1,294,512 active spindles, Georgia had 2,682,730, North Carolina had 5,643,547 and South Carolina had 5,107,038, it becomes evident that the wage paid to textile workers in Mississippi, while all-important to the workers who receive it, is a trifling consideration in the Southern wage situation, and is not to be given much weight in the average. In a study of the labor situation in the Southern mills, therefore, we may confine our investigations to those four States, Alabama, Georgia, North and South Carolina, and get all that is of much value for our purpose.

### Some Pertinent Questions.

Why are the Southern mills able to keep their help satisfied with wages 37 per cent below those of the Eastern mills, and, at the same time, to keep them working longer hours? How much longer will they be able to continue before increasing industrial development of the South draws into industry all available Southern labor, and levels up the conditions between the two sections? Some New England cotton mill men are hanging on by their teeth to what they have, in the hope that this day is not too far distant, while others have given up the unequal struggle and either moved south or liquidated. A good many, it should be added, are making money right where they are, and expect to continue to do so indefinitely, regardless of Southern competition. Are the Southern mills really exhausting the great reservoirs of lowland and mountain farm people they have so far drawn upon—as most men in New England believe? If they are, we may expect to see wages in Southern mills mounting before much longer.

These are a few of the questions I set out to answer when I started South the first day of June, and in the following articles I will record my findings.

The question as to why Southern mills are able to keep their help working for much lower wages, and on longer hours, is not simply answered. There are at least five important factors concerned.

### The Contrast in Wages.

First, the wage is not the chief factor concerned in keeping Southern mill help satisfied, as I will show presently. But these people are little inclined to draw contrasts between their wages and New England wages. To them New England is almost like a foreign country. The contrast that is ever present with them is between their earnings

(Continued on Page 31)

**ROGERS FIBRE CO.**

**Sold Through Southern Supply Dealers**

1024 Filbert St., Philadelphia
121 Beach St., Boston

135 Brevard Court, Charlotte, N. C.
78 Fifth Ave., New York

DU PONT DYESTUFFS

## Pontamine Fast Orange 2 G Concentrated

(Patent applied for)

PONTAMINE Fast Orange 2 G Concentrated is an entirely new direct dyestuff characterized by its brightness of shade, excellent general fastness properties and dischargeability.

It can be used on all the ordinary types of circulating machines and employed in the dyeing of cotton in all its forms from raw stock to the piece.

As diazotizing and developing affects neither its shade nor any of its properties, Pontamine Fast Orange 2 G Concentrated has the additional advantage that it can be used for shading developed colors, a characteristic possessed by but few direct dyes.

---

E. I. DU PONT DE NEMOURS & CO., Inc.
*Dyestuffs Department*
WILMINGTON DELAWARE

A WONDER PRODUCT
"H. P. C." WARP DRESSING
THE HART PRODUCTS CORPORATION
CONSULTING CHEMISTS & MANUFACTURERS,
1440 BROADWAY, NEW YORK, N.Y.

# Practical Discussions
By
# Practical Men

### Speed Limit.

Editor:

How we reached the limit of speed of cotton spinning. For example, our spinning frame spindles do not average a higher speed than 10,000 R.P.M. Will it ever be possible to drive them at, say, 20,000 or more? What limits the speed from going higher? Progressive.

### Card Settings.

Editor:

I have studied various rule for card settings. But there are so many different settings given by carders, that I am somewhat confused. And as I suppose card settings are also improved from time to time this may be the reason why card settings change. I would like to hear afresh from a few more good carders just what settings they have found best in their work. Shasta.

### Weaving Rayon.

Editor:

I wish to get some points on weaving rayon and will be glad if any of your readers who are experienced in handling rayon as filling.

I would like to know how to prevent shiny places, or "shiners," as they are called. What is the best method of setting the harness when using rayon filling, the best speed for the looms and the best method for putting friction on the rayon bobbin in the shuttle.

I would also loke to know the best humidity for weaving rayon yarns and whether it is best to weight the warps by friction let-off or by mechanical means.

Learner.

### Answer to D.

Editor:

Regarding draft gears which have the proper number of teeth, but which are larger or smaller than the standard pitch. There is always a certain amount of play between gear teeth—especially when not made of the proper size or pitch, to allow same back-lashing. On account of this, some draft gears may not be quite of the right size and yet not be enough over-size or under-size to prevent meshing and truning in the same time that a proper size gear would turn. In such cases the delivery of the sliver or yarn will be of the right size and twist. However, this is not the proper way to make and run gears. Your gears should be of the exact size and pitch that the standard gears are on your frames. While off-pitch and off-size gears may apparently mesh right. there must be some give and take in some way. There be a slipping in the movement now and then or a nip here and nip there, and this will make as good work as perfectly made gears would make.

Take careful measurements of your gear teeth, both the right and the wrong ones, and you will find that there is quite a difference in the size of your gear teeth when the diameter is off-size. Of course, there are simple mechanical rules by which any mill man may acquaint himself with the proper making of gears and to check up on his gears to see if they are made right. They are easy to learn, and it is an advantage to be familiar with these simple rules for gear making.

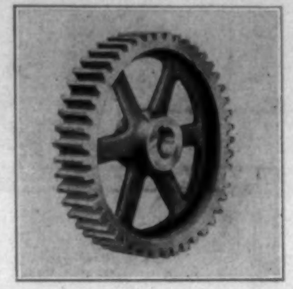
Gears are known by a certain pitch diameter. (This is not the outside diameter). For example: if a gear has 48 teeth and it has a pitch diameter of 6 inches from the center of one tooth to the center of another tooth straight across the gear, it will have 8 teeth to the inch of its diametral pitch or pitch diameter. The pitch is found by dividing the total number of teeth in the gear by the pitch diameter. Now, to find the outside diameter of a gear, add 2 teeth to the total number of the teeth in the gear, and divide by the the pitch diameter thus: $48+2=50\div6=8$ 66-100 which would be the outside diameter of this gear.

There is a great deal more to a gear like the following: Tooth depth, tooth thickness, tooth clearance, tooth space, tooth pitch point, tooth circular pitch, tooth face, total teeth. There are simple rules of common arithmetic to find the exact size and spaces mentioned in connection with with the correct maing of a gear. These rules may be found in any standard engineering book published. H. D.M.

### Answer to Va.

Editor:

Va. has asked a very practical question and it should receive comments from many sources. My experience has covered both high and low speed wapers. And I find the question of speed is regulated by many different conditions. And there must be a speed best suited for each particular condition. If a mill is running on straight goods work, the right highest speed can soon be found and this speed kept up during normal conditions. But where a mill is constantly changing, a variable speed which is adjustable to the ever-changing conditions is the only right way to operate warpers It is



We Manufacture Gears For All Industrial Purposes

All gears cut on automatic gear generating machines.

WE MAKE
Bevel Gears
3 pitch 18 inches or smaller.
Spur Gears
3 pitch 35 inches or smaller.
Worm Gears
3 pitch 18 inches or smaller.
Helical or Spiral Gears
3 pitch 18 inches or smaller.
Worms of all kinds.

We specialize on heat treated steel motor pinions, Gears for Pickers, Cards, Lappers, Combers, Drawing, Roving and Spinning Frames, Spoolers, winders and all textile machinery.

Gears Made From
Steel, Iron, Bronze, Rawhide or Fabroid materials.
Send drawing or sample gear.
Prices on application.

FERGUSON
GEAR COMPANY
Gastonia, N. C.
West Airline Ave. Phone 1070

MANUFACTURED ONLY BY THE DENISON MFG. CO
ASHEVILLE, N. C.
Mi
CLEANSER
TRADE MARK

Scrub With
MI CLEANSER

It is to be expected that a Scrubbing Powder containing materials of only the finest cleansing, scouring and absorbing qualities will clean QUICKER and BETTER.
Yet we do not claim simply greater efficiency, for our direct to the Mill service makes possible an unusually low price.

Write us for a Sample and Prices

THE DENISON MFG. CO.
ASHEVILLE, N. C.
Established 1915

not right or possible to tell another mill man at just what speed he should run the local warpers without knowing the local conditions. And he can know the actual local conditions only by going there to work for a time and find out the ins and outs, and then he can ascertain the best speed just as any experienced man should. Here are some of the conditions which will cause us to operate our warpers of different speeds: Coarse carded yarns, medium carded yarns, fine carded yarns, coarse combed yarns, medium combed yarns, fine combed yarns, coarse waste yarns, meduim waste yarns. The above eight different grades of yarn may have eight different best speeds. But wait to hear that poor-running work will also change each one of these eight different speeds again. Listen again, these various speeds will have to be re-compounded if unimproved machinery is used. It stands to reason that the latest and most improved warpers will stand a higher speed than antiquated warpers can.

Boiling down our ideas on this, it also stands approved that under highly developed manufacturing conditions, big things can be done with warping. Far example, one large mill started out to improve the running of the work on the warpers. Special attention was given to the pickers, cards, cotton mixtures, and everything was gotten into good shape for a warping racing record. This brought about the following improved running conditions on the warpers: ten per cent more yarns was put on the section beams, because the yarn was so much evener, stronger, and that it would stand more tension and compression, good running. Over 100 per cent less stops for the breakage and piecing of the ends. And the best of all the section beams were filled including the 10 per cent extra yarn thereon, in 1/5 of the time that it took before the improved conditions figured into the new situation. The above facts and figures do make us sit up and take notice. It shows what can be done when all hands pull together in a harmonious intensive service. What are you going to do about it—catch up or beat it? Beaten.

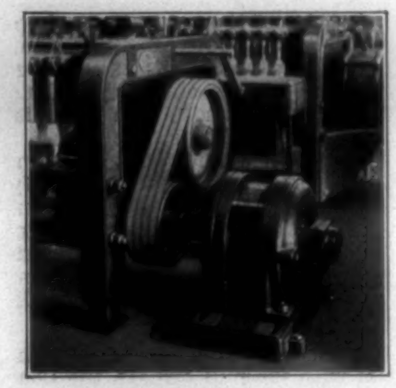
## The Texrope Drive

An important development in the field of power transmission machinery has just been announced by the Allis-Chalmers Mfg. Co., who have recently perfected an entirely new type of short center, flexible drive, known as the Texrope Drive.

The Texrope Drive consists of two grooved sheaves and a number of specially constructed endless "V" belts. The sheaves are set just far enough apart so that the belts just fit the grooves, without either tension or slack.

Previously no short center drive existed which did not have slip, back lash or lost motion, which caused jerky or running, with consequent high percentage of broken threads. Since the Texrope belts just fit the sheaves, there is no slack to be taken up. Because of the "V" construction they cannot slip, as the harder the pull the more firmly the belts grip the grooves. Being stretchable, they cannot jerk, either in starting, acceleration or running, nor can they transmit vibrations, but act as cushions between driving and driven machines. Smoothness of transmission never before known is attained by the Texrope Drive, as opposed to the series of linear pulsations delivered by the ordinary short center drive, the makers claim.

Bearing pressures are low, since no belt tension is employed. The drive occupies very little space. It is silent perfectly clean, unaffected by moisture or dirt, and is safe, simple and trouble proof. Since it does not slip, the speed ratios are fixed and exact.



The Texrope Drive.

The drive is durable as there is very little wear. Each belt transmits its proportional share of the load.

Texrope Drives have been built from ½ to 250 HP with ratios up to 7 to 1 and belt speeds of from 800 to 6000 feet. While they have been largely adapted by the textile industry they have proved equally desirable for other applications, and are already in use in nearly every industry. They are either optional or standard factory equipment on a number of textile machines, fans, machine tools, food manufacturing machinery, refrigeration machines, and are being used in mining, crushing, wood and metal working machines, elevators and conveyors and paper, flour and rubber mill drives, etc.

### Textile School Opens in Piedmont.

Piedmont, Ala.—The textile night school, which is run practically for th eemployees of the Standard-Coosa-Thatcher Company, of this place, has opened for the winter term with a large and enthusiastic enrollment.

J. Orlando Ogle, who will superintend the school, states that the coming term has an unusually bright prospect.

He is also principal of the Frances E. Willard public school. D. F. Long, of this city, who has a certificate from the extension department of the University of Alabama in textile work, will assist.

RAYON REEDS

On account of the ever-increasing use of Rayon (artificial silk) by Southern cotton mills, we are making a reed particularly adapted to the Rayon yarns.

Special attention is necessary to the finish on the wire used in these reeds, which finish requires approximately three times the length of time usually given to regular reed wire.

There is, however, absolutely no extra charge for this special finish as we invoice Rayon reeds at our regular standard prices.

STEEL HEDDLE MANUFACTURING CO.

**MAIN PLANT**
**21st and Allegheny Ave., Philadelphia, Pa.**
**SOUTHERN PLANT**
**Steel Heddle Bldg., 621-635 E. Mcbee Ave.,**
**Greenville, S. C. Hampton Smith, Manager.**

**New England Office:**
**634 Grosvenor Bldg., Providence, R. I.**

**Foreign Offices:**
**Huddersfield, England—Shanghai, China.**

**THE STEEL HEDDLE LINE**

"Duplex" Loom Harness (complete with Frames and Heddles fully assembled). Drop Wires (with Nickel Plated, Copper Plated or Plain Finished). Heddles—Harness Frames—Selvage Harness—Leno Doups—Jacquard Heddles—Lingoes—Improved Loom Reeds—Leno Reeds—Lease Reeds—Beamer Hecks—Combs.

# *Cone Group of Mills Thirty Years Old*

THERE has just been celebrated 30th anniversary of the founding of the industry which today produces one-third of the denims made in all the world—the Cone group of mills at Greensboro, N. C. The romantic history of how this great enterprise was started in 1895 by Moses and Caesar Cone is related in a hansome brochure dedicated to these two leaders.

The story of the Cone mills is inseparable from the story of the upbuilding of the Southern cotton mill industry. It is a record of pioneering. The book says, "there was nothing to begin with but proximity," This thought of geographical advantages was one uppermost in the minds of the founders, because they named their first mill "Proximity."

### Humanitarian Ideals Built Success.

Great success was theirs almost from the beginning, and the chroniclers of the record lay it "partly to heredity and training, partly to opportunity and environment." But more than anything else, they base success "upon a humanitarian policy, upon the development of character, skill and loyalty" in the upbuilding of the original organization. From the very start the Proximity Manufacturing Co. planned to give its employees every opportunity for social, mental, physical and spiritual advancement and this principle has been maintained ever since.

Moses and Caesar Cone were born in Tennessee. During their youth, the father, Herman Cone, moved to Baltimore and established there a wholesale grocery house, which became in 1878 the firm of H. Cone & Sons. Their experience in this business gave the young men a thorough knowledge of the conditions and opportunities throughout the South.

Realizing the South's undeveloped resources, Moses and Caesar Cone, when the Baltimore firm was dissolved in 1890, formed the Cone Export & Commission Co., handling cotton goods in New York city. Through this sales organization, which remains today a leading factor in the marketing of Southern-made cotton fabrics, they became acquainted with mill owners, mills and manufacturing.

Desiring to maintain a closer contact with the mill owners, the Cone Export & Commission Co. established a main office in 1893 at Greensboro, N. C. The New York office always remained the general sales head-quarters.

Being thus brought in close touch with cotton manufacturing and seeing the potentialities in cotton spinning in the South, the Cones determined to begin the manufacture of denims. After making a careful survey, they decided to build outside of Greensboro, and acquired several hundred acres of land for this purpose, alongside the main line of the Southern Railway. Here were erected in 1895 and 1896 the mills of the Proximity Manufacturing Co.

### White Oak Largest Denim Mill

Starting with 240 looms, the business was so successful that, within 10 years, the company decided to build near by, the White Oak Mills, which has become the largest denim manufacturing plant in the world. The two mills at the present time operate 4,600 looms.

Like "Proximity," the choosing of the name "White Oak" is also an interesting anecdote. The site of the White Oak Mills was mostly dense forest. In surveying the land, a great white oak tree was used as the starting point. "Meet me at the big white oak" was the customary saying in those days. The old white oak still stands close to the big mill and has given its name to the industry and to the mill village.

Later on, as he became more familiar with the market for work clothes, Caesar Cone decided to organize the Proximity Print Works, in order to secure foreign markets, which absorb large quantities of indigo drills and khakis. The Print Works has since gone into the printing of art ticking for mattress covers. It has a present capacity of 125,000 yards a day.

All told, the three mills employ about 3,000 hands, and support a population of 15,000 people. In 1890, Greensboro had 3,000 people. It now has 50,000, and is adding two new families, two new homes, per day.

### Set Pace for Denim Market.

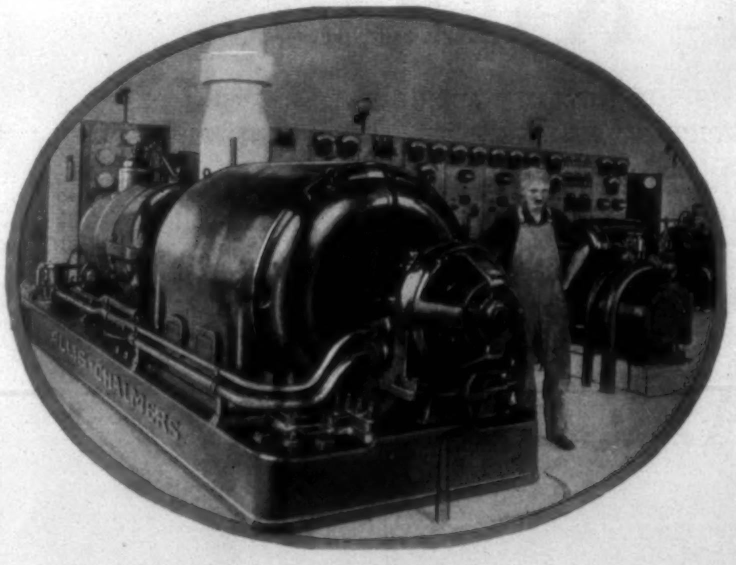
Moses Cone lived to see his idea a success, but not to see his great ambitions fully realized. He died in 1908, leaving his brother Caesar to carry on alone. The man was equal to the task. No responsibility seemed too great for Caesar Cone. The denim market came to look to him to forecast the demand, to set the pace in production.

Caesar Cone died in 1917 at the age of 57. But he had brought into the business two younger brothers, Bernard M. and Julius W. Cone. Since Caesar Cone's death, these men, with Caesar's son, Herman Cone, and J. E. Hardin, secretary and general manager, have taken over the responsibilities of the Cone Mills.

### Consumption and Production Figures.

The annual payroll of the Cone Mills is around $3,000,000 and the number of employes averages 3,000. White Oak Mills operate 3,000 looms and 61,000 spindles. Print Works,

(Continued on Page 27)



Steam Turbines for Industrial Plants

Allis - Chalmers Turbo - Generator, 2300 volts, 314 Amp., 3-phase, 60-cycle, 3600 R. P. M. in a nationally known industrial plant in Detroit, is but one of the many successful industrial installations.

Allis-Chalmers Steam Turbine and Alternator units are built in sizes ranging from 200 kw. up

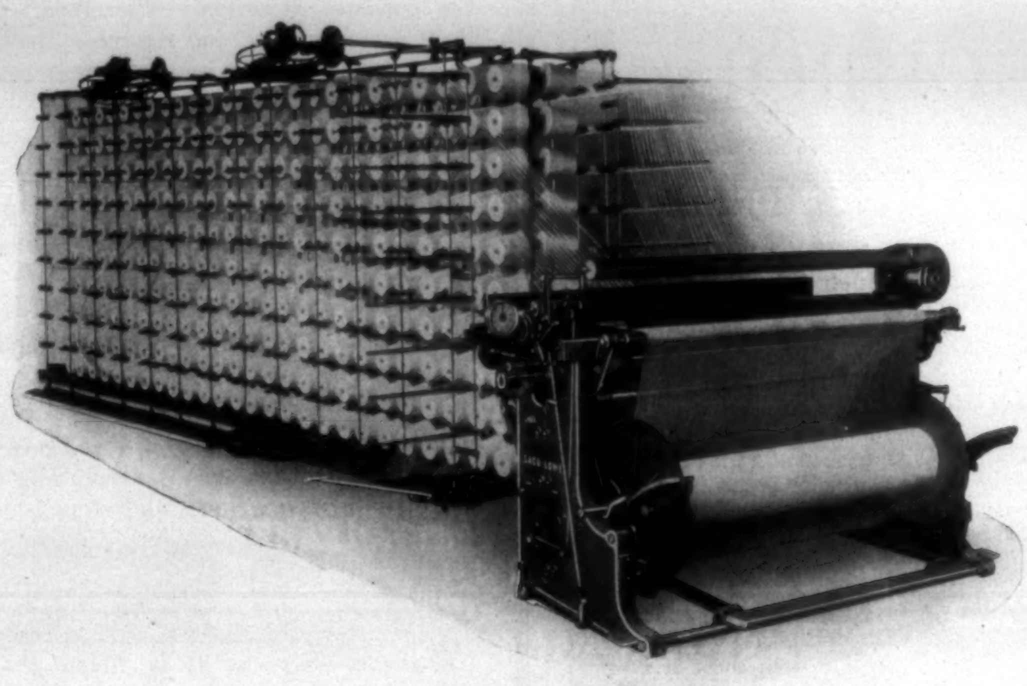
ALLIS-CHALMERS
Manufacturing Company
Milwaukee, Wis., U. S. A.

PRODUCTS

Electrical Machinery
Steam Turbines
Steam Engines
Condensers
Hydraulic Turbines
Pumping Engines
Centrifugal Pumps
Gas Engines
Oil Engines
Mining Machinery
Metallurgical Machinery
Crusher and Cement Machinery
Flour Mill Machinery
Saw Mill Machinery
Air Compressors
Air Brakes
Steam and Electric Hoists
Farm Tractors
Power Transmission Machinery
Perforated Metal
Timber Preserving Machinery

# SACO-LOWELL

LARGEST MANUFACTURERS OF TEXTILE MACHINERY IN AMERICA



Saco-Lowell High Speed Warper

PERFECT WARPS

GREATER PRODUCTION

LOWER COST

FLOOR SPACE AVAILABLE FOR OTHER EQUIPMENT

We can demonstrate to a large percentage of mills in the country, that they can save money on every pound of warp yarn by replacing their existing equipment.

## SACO-LOWELL SHOPS

1824 1925

SALES OFFICES

NO. 1 FEDERAL STREET
BOSTON, MASS.

1220 MINT STREET
CHARLOTTE, N. C.

HEALEY BUILDING
ATLANTA, GA.

MASONIC BUILDING
GREENVILLE, S. C.

NOPCO

RAYON SCOUROL

For Scouring Rayon Products

*RAYON SCOUROL is completely soluble in water without boiling;* in fact it will go into COMPLETE SOLUTION in COLD water. On account of its great solubility and the fact that it wets out the fibre very quickly, it is not necessary to use high or boiling temperatures and the oil or other foreign matter is quickly and completely removed from the fibre without injury. With ordinary soaps complete removal of unsaponified matter is not possible until a very high temperature is reached, and this is often objectionable for the reason that high temperatures have an injurious effect on the silk.

*Rayon Scourol is not alkaline,* nor does it produce free alkali by hydrolosis when diluted in water as soaps do. When *Rayon Scourol* is used the silk is preserved and kept bright and free from the action of chemicals of this kind.

*Rayon Scourol is a straight oil-like product* with the full softening values of the original oil retained, and for this reason keeps the rayon soft, full, and in general all-round good condition.

*Rayon Scourol acts as a dyeing assistant,* and artificial silk when scoured with it is in a condition to readily take dye in an even, uniform manner, and at the same time the silk is not deadened or impaired in any way.

*Write for Our Technical Service Data Sheet on This Product*

National Oil Products Co.

Main Office:
HARRISON, N. J.

District Offices:
CHICAGO BOSTON

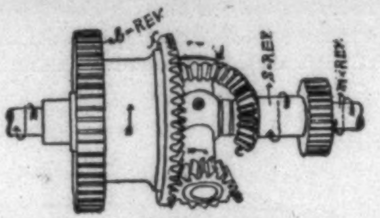
# *Cotton Mill Processes and Calculations*

### By D. A. Tompkins.

### Copy Revised for Third Edition.

(Continued From Last Week)

Consider the hollow shaft and pinion as slipped out of gear. Then each turn of the main shaft would make one revolution of sleeve. When the pinion (c) is in place the contact of the teeth (d) with it during one revolution of the main shaft will have the same effect on the sleeve as one revolution of (c) in the opposite direction. Therefore, considering the hollow shaft as stationary, and the main shaft to make (m) revolutions, the sleeve will make (m-mr) revolutions. Now, when the hollow shaft driven by the cones in the same direction as the main shaft, makes (s) revolutions it will decrease (mr) by an amount equal (sr), therefore b=m—mr—sr



Tweedales' Differential Motion.

Fig. 32.

$$s=\frac{m-mr-b}{r}$$

Example.—Suppose it is found that the bobbin driver fastened on the sleeve must make 250 revolutions to give the proper speed of bobbin, and the main shaft makes 300 revolutions:

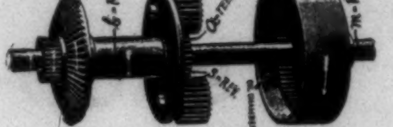
Let c=20, d=32, e=18, and f=54 then $r=\frac{20\times18}{32\times54}=.208$.
Substituting in the equation above

$$s=\frac{300-300\times.208-250}{.208}=60$$

Therefore such a gear would be put on the bottom cone as would make the hollow shaft and pinion run 60 revolutions.

**Daly Differential.**

135. This is a compound widely different from those described. The amount of friction is reduced by using spur gears instead of bevel gears. This type of differential shown in Fig. 33 is used n the Woonsocket roving frame.



Daly's Differential Motion.

Fig. 33

A circular box fastened on the main shaft has a circular rack on the inside of the rim. One end of the sleeve is made in the form of a circular plate and fits against the open side of the box. On this plate are two carrier wheels that gear with circular rack and with a pinion that is fastened on a hollow shaft that runs on the inside of the sleeeve. This hollow shaft is driven by the cones.

Now one revolution of the main shaft will make one revolution of the box and would make one revolution of the sleeve if it were not for the contact of the carrier teeth with the pinion.

Let m=rev. of main shaft.
s=rev. of main shaft.
b=rev. of sleeve and bobbin gear.
c=teeth in circular rack.
a=teeth in pinion.

As the carrier wheels pass around the pinion the lost motion will equal

$$m \times \frac{a}{c}$$

and (m) revolutions of the main shaft when the pinion is stationary will revolve the sleeve.

$$m - \frac{a}{c} m \text{ revolutions.}$$

One revolution of the hollow shaft upon which the pinion is attached will revolve the plate backward

$$\frac{a}{c} \text{ revolution,}$$

therfore

$$b = m - \frac{a}{c} m - \frac{a}{c} s$$

$$s = \frac{m - b}{\frac{a}{c}} - m$$

Example.—
Main shaft makes 300 rev.
Required speed of bobbin driver and sleeve 100 rev.
Circular rack=80 teeth
Pinion=40 teeth

$$s = \frac{300 - 100}{\frac{40}{80}} - 300$$

$$s = 100$$

Therefore the hollow shaft which is driven by the cones and carries the pinion must be made to run 100 revolutions in order to have the right bobbin speed.

**Calculations on the Differential.**

136. The object in computing the differential is first to find what size gear to put on the bottom cone to give the proper tension during the first layer. The method of proceeding is as follows:

(1) Knowing the speed of main shaft, find the spindle speed.

(2) Knowing the number of the roving and the twist gear, find the number of inches delivered per minute.

(3) Divide the inches of roving by the circumference of the

(Continued on Page 28)

OUR FIELD
HOYT BELTING
EDW. R. LADEW CO. INC.
SINCE 1835
TRADE MARK

Service that meets every emergency!

A main-drive belt crippled by accident. The whole plant tied up. A hurry call to Ladew for emergency service. And 24 hours afterwards the new Ladew Belt, 176 feet long, had been built, installed and was carrying its 1000 H. P. load!

Such a record service is gladly rendered in cases of emergency. But most orders can be shipped immediately from the ample stocks at branch stores. In cases of unusual requirements, Ladew facilities at the main factory are such that **any belt** can be shipped within 24 hours.

Whether for rush shipment or not, you are always sure of Ladew Quality Belts. Made for long-term, economical service with all the skill acquired in 90 years of fine belt making. Send in the coupon for "The Proof Book" and learn how they will save money in your plant.

EDW. R. LADEW CO., INC.
BELTING AND OTHER LEATHER PRODUCTS
*Since* 1835
29 Murray St., New York City

*Branches*

Atlanta, Ga.
Boston, Mass.
Chicago, Ill.
Glen Cove, N. Y.
Newark, N. J.
Philadelphia Pa.
Pittsburg, Pa.
San Francisco, Calif.

— — — — — — —MAIL TODAY— — — — — — —

EDW. R. LADEW CO., INC.
29 Murray St., New York, U. S. A.

Please send me a copy of "The Proof Book" and full information about Ladew Leather Belting.

The PROOF BOOK

Name ..................................................
Company ..................................................
Address ..................................................

102-G

SOUTHERN
TEXTILE BULLETIN
Member of Audit Bureau of Circulations
Member of Associated Business Papers, Inc.

Published Every Thursday By
CLARK PUBLISHING COMPANY
Offices: 39-41 S. Church St., Charlotte, N. C.

THURSDAY, NOVEMBER 12, 1925

DAVID CLARK — *Managing Editor*
D. H. HILL, JR. — *Associate Editor*
JUNIUS M. SMITH — *Business Manager*

SUBSCRIPTION

One year, payable in advance — $2.00
Other Countries in Postal Union — 4.00
Single Copies — .10

Contributions on subjects pertaining to cotton, its manufacture and distribution, are requested. Contributed articles do not necessarily reflect the opinion of the publishers. Items pertaining to new mills, extensions, etc., are solicited.

ADVERTISING

Advertising rates furnished upon application.

Address all communications and make all drafts, checks and money orders payable to Clark Publishing Company, Charlotte, N. C.

## Child Labor Amendment

EVERY day and from every section of the United States there comes to us requests for material relative to the Federal Child Labor Amendment.

There were five such letters in our morning mail and most of them were from college or high school professors who are managing debates on the subject.

There are also coming to us every day letters from men and women in every section of the United States who aided us in our campaign last year and who are now alarmed by the activities of the advocates of the amendment.

Last week we heard over the radio for KDKA, Pittsburg, a "propaganda" talk by a representative of the Children's Bureau of the U. S. Department of Labor in which the speaker, by means of what he called "word picture," which was nothing more or less than his imagination pictured the Children's Bureau as the greatest human agency of all the centuries.

The Children's Bureau was the real force behind the proposed Federal Child Labor Amendment and its real object was to secure a million dollar annual appropriation.

The defeat of the Amendment has given them a hard blow because the attention of the voters has been called to the enormous waste of public funds by Federal Bureaus.

The Children's Bureau is aware of that situation and are attempting by radio talks and other forms of propaganda to save its skin. The expense of the propaganda is now being paid from Government funds, but as soon as Congress meets we will see what can be done through an investigation by Congress.

After a strenuous campaign based upon the false statement of "more than a million little children gainfully employed" and with the backing of practically every political organization, almost every magazine and prominent newspaper in the United States, they managed to get four Legislatures to ratify the Amendment and one of the four has signified its intention of revoking its ratification, which it has a legal right to do.

Our editor spent most of his time during the eight months from June, 1924, to February, 1925, in a campaign of enlightenment, during which more than 250,000 pieces of literature was distributed from our office.

It was hard going at first, but when the public and the newspapers learned the truth they began to come over and the politicians followed.

Many of the leading men in public life were at heart opposed to the enlargement of Federal power, but, until they found that public sentiment was also opposed, had been afraid not to appear favorable to the Amendment.

With everything in their favor at the start the advocates could only get four States to ratify.

With politicians now unafraid, and with more than 800 leading newspapers now opposed, it is absolutely foolish for anyone to believe that 36 States will ratify, especially so when many of them are now recorded at Washington with rejectment resolutions.

The action of North Carolina and Georgia in advancing their child labor laws so that no child under 14 years of age may now be legally employed in any manufacturing establishment in any Southern State, has taken from the advocates their main line of attack and their most effective appeal.

There is not the slightest chance of the Federal Child Labor Amendment being ratified by the necessary number of States or ever becoming a law, and our friends throughout the United States who are now writing us on the subject are needlessly alarmed.

The opposition of the National Grange and the American Farm Bureau, showing as it does a united farm opposition, is enough in itself to insure the defeat of any effort to ratify.

In his address at Sacramento, Cal., this week, President Tabor, of the National Grange, put the farmers on record with the following statement:

> For more than a half century one of the cardinal activities of the Grange has been the education and development of rural youth. The Grange has been a valuable training school for our boys and girls. The Juvenile Grange has made its appearance and will leave its impress on the Grange a few years hence.
>
> We cannot discuss child welfare without giving some thought and consideration to the Child Labor Amendment which was defeated by a large majority of the State Legislatures during the past year. The Grange sympathizes with all legislation and with every movement that seeks to eliminate the evils of child labor. It has favored every State and National statute that has sought to protect the welfare of the nation's greatest asset,—its childhood; but in the recent contest the Grange opposed by National resolution pending amendment, because of grave mistakes that had been made in its drafting.
>
> As we view a group of boys from 14 to 18 coming from country or town in a football tussle, or when we see a group of girls displaying their skill in home economics, sewing or canning, we can but feel that these vigorous specimens of youth are not in need of the protecting hand of the Federal Government.
>
> The charge has been made that the farmer did not understand the amendment. The truth is that he has understood it too well, but the framers of the amendment and some of its supporters have not understood our attitude toward child development and child life. It is always serious to create any new Federal bureaus because of the burden on taxpayers, and it is especially serious to give into the hands of the law-making branch of government, the right to interfere with the home life under any conditions, for we cannot safely substitute government agencies for home control.
>
> Those who discuss the amendment in its relation to agriculture, business or labor, miss the mark, because, as important as these agencies are, they have no right to be considered or weighed in determining our course on this amendment. There is just one question that must determine our attitude,—that is, the welfare of our boys and girls. If the dignity, nobility and necessity of toil and thrift are ever to be taught, they must come before the youth reaches eighteen years of age.
>
> The Grange will co-operate in any movement that seeks to destroy the evils of child labor, but before its support can be secured, the age limit must be materially reduced, or the health and mind developing activities of the farm and home must be exempted."

## Standardizing Yarn Numbers

C. SINGLETON GREEN, secretary of the Southern Yarn Spinners' Associaiton, is engaged in a very important and worth while piece of work in his efforts to get yarn numbers standardized.

Government efforts to standardize duck resulted in eliminating many numbers and specifications with a great saving to the duck mills and to the buyers of duck.

In many other lines of work standardization efforts have resulted in great economies and we believe that the same thing can be done in the yarn manufacturing industry.

One of the knitting associations is to meet at an early date and if the recommendation of their committee, which has been working in co-operation with Mr. Green, are adopted, they will in the future use about half the numbers which their section of the industry are now purchasing.

## Bureaucratic Limits

APPARENTLY impressed by the multitude of advice-giving pamphlets issued by the Agriculture Department, Robert O. Deming, of Oswego, Kansas, has appealed to the department for information on

> "How to put on a shirt, eat an apple, peel potatoes, adjust a dog collar, shovel coal, wash a dog and pick a chicken."

We feel that the sarcasm of Mr. Deming is well justified.

There are bureaucrats in Washington who feel that bureaus should be established at Government expense to attend to every single individual beginning many months before birth and extending through life and many years after death.

They feel that the public should pay burdensome taxes with which to pay salaries to an army of old maids and worthless men who have a desire to regulate and control all human activities and we have no doubt that many of them feel entirely competent to tell Mr. Deming how "to put on a shirt."

## The Good Old Days

THOSE who long for a return of the good old days and insist that the mill business "ain't what she used to be." will find the following item interesting. It is taken from the Southern Home, published in Charlotte by General D. H. Hill, in 1875, just fifty years ago:

> The annual meeting of the stockholders of the Graniteville Cotton Manufacturing Company, South Carolina, was held last week. The report of President Hickman shows that the profits for the year were $114,588, a trifle over nineteen per cent of the capital stock. This result is very satisfactory and encouraging, for the year was confessedly a hard one for cotton mills and many in the North either ran on short time or stopped altogether. The Graniteville Mills were run on full pay during the whole year. Their production was 10,526,000 yards of fabrics, besides a quantity of knitting yarns; 871 bales of cotton were consumed, which cost 14.38 cents per pound. The old board of directors was unanimously re-elected and the prosperous factory enters upon another year with bright prospects.

It will be noted that while the mill showed a good profit, it was "confessedly" a hard year and that the reference to other mills running on short time has a very familiar ring.

# Personal News

J. J. Camp, formerly of Walhalla, S. C., is now located at Central, S. C.

Claude E. Bailey has accepted the position of superintendent of the Marietta Cotton Mills Marietta, Ga.

H. J. Campion has taken charge of the branch plant of the Paducah Hosiery Mills, Arlington, Ky.

T. H. Whitesides, of Lincolnton, N. C., has accepted a position with the James Mills No. 2, Maiden, N. C.

H. C. Hardy has resigned as superintendent of the Houston Cotton and Twine Mills, Houston, Texas.

John Bryant has resigned as superintendent of the Georgia-Kincaid Mills, No. 1, Griffin, Ga.

A. W. Greer has become overseer of carding and spinning at the Highland Mllis, Griffin, Ga.

Marshall Pender has accepted a position in the machine shop at the Spray Woolen Mills, Spray, N. C.

C. B. Wise has resigned as outside overseer at the Deep River Mills, Randleman, N. C.

J. W. Hilburn, from the Puritan, Mills, Fayetteville, N. C., has become outside overseer at the Deep River Mills, Randleman, N. C.

A. L. Carman has accepted the position of overseer of weaving and slashing at the Brookford Mills, Brookford, N. C.

A. A. Oliver, of Lincolnton, N. C., has accepted a position with the Roseland Spinning Company, of that place.

W. S. Griffin has accepted the position of superintendent of the Houston Cotton and Twine Mill, Houston, Texas.

Charles E. Gray has been promoted from warper tender to second hand in spooling and warping at the Franklin Cotton Mills, Concord, N. C.

Paul B. Scott, suerintendent of the Edna Mills, Reidsville, N. C., succeeds his father John F. Scott as general superintendent of these mills.

Daniel S. Pritchett has been promoted from superintendent of the Georgia-Kincaid Mills, No. 4 to a similar position at the No. 1 mill, Griffin, Ga.

A. L. Betram, of the Pacific Mills, Lyman, S. C., whose death was reported last week, was not master mechanic at the mill, as reported through error. W. R. Knight is master mechanic and is giving entire satisfaction.

J. Harvey Carpenter has returned to his former position as superintendent of the Perkins Hosiery Mills, Columbus, Ga.

William Miller has resigned as overseer spinning at the Mansfield Mills, Lumberton, N. C., to become overseer carding and spinning at the Fountain Mills, Tarboro, N. C.

J. E. Whitworth has resigned as second hand in spinning at the Ragan Spinning Mill, Gastonia, N. C., and accepted a position with the Globe Yarn Mills, Mount Holly, N. C.

J. W. Hanes, superintendent of the Exposition Mills, Atlanta, Ga., and J. B. Murray, superintendent of the Morgan-Hamilton Mills, Nashville, Tenn., are on a business trip to New York and other points this week.

J. C. Ballard has resigned as second hand in spooling and warping at the Franklin Mills, Concord, N. C., to become section hand at the Gibson Manufacturing Company, of the same place.

W. J. Meyer has been appointed as a reprensative of the Finnell System, Inc., and will have headquarters in Charlotte. He will assist Mr. Finnell in handling this territory.

John F. Scott has resigned as general superintendent of the Edna Mills, Reidsville, N. C., in order to devote his entire time to the Henrietta Mills, Henrietta and Caroleen, N. C., and Cherokee Falls, S. C., of which he is general suerintendent.

J. W. Vaughan, Jr., 415 Masonic Temple, Greenville, S. C., has been appointed representative for the Diamond Chain and Manufacturing Company, of Indianapolis, Ind., and will represent them in the Southern textile industry. He is an engineer well equipped to give advice on the the application of Diamond high speed roller chains to the power transmission equipment in cotton mills.

### Mills Moving South.

According to announcement by John Starr, said to be representing financial interests in the East, his interests have purchased a large site suitable for the development of a large mill community near Littleton, N. C. It is understood that at least two New England mills are to be moved to this site, one of them being the Maplewood Mills, of Fall River, a large mill that manufactures absorbent cotton.

Details of the proposed removal of these mills are lacking, nor can definite information of their removal be obtained at this time.

SHEETING AND DRILLS WANTED IN QUANTITY
36" 40x40—6.15
36" 48x48—5.50
36" 48x48—4.00
40" 56x60—3.60
Also 56"—60" Drills and Sheetings
Manufacturers' Selling Agents, Distributors and Commission Merchants
Correspondence Solicited
THE LANDERS BROS. CO., Toledo, Ohio

AMALIE PRODUCTS

The Users' Viewpoint

A consistent growth in our user list—from year to year—pictures in simple terms the highly satisfactory results that are being obtained from GLUANTINE and TALLOW SOLUBLE.

These two warp dressings—combining common sense softening and binding properties—were created and perfected by men who understand your problems intimately through years of research and actual mill contact.

Coupling science and practice in this way, with raw materials and chemicals, the best that money can buy, must of a surety give to the user that sense of safety in buying and faith in the maker.

The stringent control ever maintained by our textile laboratories throughout each stage of the manufacturing process, gives added assurance to the user as to uniformity and quality.

These all-important factors are greatly contributing to new standards set in weaving production; finer bleached and finished fabrics and—as a matter of course—bigger profits for the cotton mill.

Our sales offices and warehouses are located in the principal centers of the textile industry. Write to our home office of your problems. Our suggestions may prove of real benefit to you.

L. Sonneborn Sons,
Incorporated
Manufacturing Chemists for the Textile Industry
114 Fifth Avenue
New York City.
Sonneborn Brothers
Southwestern Distributors Dallas, Texas

L. SONNEBORN SONS. INC., NEW YORK. N.Y.

# MILL NEWS ITEMS OF INTEREST

**Morristown, Tenn.**—It is reported that the Oak Knitting Company, of Syracuse, N. Y., will build a plant here.

**Sherman, Texas.**—It is reported that the Sherman Kiwanis Club is making efforts to locate a knitting mill here.

**Meridan, Miss.**—It is understood that the Meridan Knitting Mills will erect a hosiery mill 50x130 feet. Alden McClelland is president.

**Arlington, Ky.**—The Paducah Hosiery Mills have opened a branch plant here. It is in charge of H. J. Campion.

**Lenoir City, Tenn.**—The H. Bacon Company Cotton Mills here are adding five new cards to their equipment. The mill is now running day and night, and business is reported as good.

**Henderson, N. C.**—Stockholders of the Henderson Hosiery Company at a meeting here reached the decision to liquidate the holdings of the company and decided to sell their property at auction on Tuesday, December 1.

**Victoria, Tex.**—The Victoria Cotton Mills, which were recently organized here by P. M. Keller, of the Belton Yarn Mills, and associates expect to let contract within the next three weeks for the erection of the mill building. It will be of standard mill construction, one and two stories.

**Morganton, W. Va.**—Tryon Silk Fabrics, Inc., will produce tricot and Milanese silk underwear in its new two-story plant, 100x40 feet, which will be equipped with machinery from a plant operated in Gloversville, N. Y., under a similar name. The company is capitalized at $150,000, with Harry Sanders president and Clyde Barb, treasurer.

**Newman, Ga.**—The McIntosh Mills will open bids this week for the addition to be built to their plant, as recently noted. The building will be of brick construction to cost around $50,000 and will contain 5,000 spindles. The company wil also install an electric plant to cost $10,000. Roberts & Co., Atlanta, are the engineers.

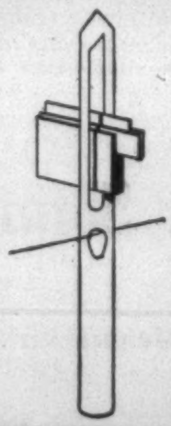
**Belmont, N. C.**—The Stockton Commission Company, Inc., has been apointed sole selling agents for the product of the looms of the Belmont Fabric Company. This mill will begin production the latter part of December of this year and will make high grade novelties on dobby looms. Frank W. Gurry, 914 Commercial Building, Charlotte is special representative in the South for the Stockton Commission Company, Inc.

THE FARISH COMPANY
COMMISSION MERCHANTS
100 WORTH STREET
NEW YORK

LIBERTY MUTUAL INSURANCE COMPANY
W. R. Pederson, Resident Manager
Carolina National Bank Building, Spartanburg, S. C.
Employers' Liability Insurance, Automobile Insurance, Public Liability Insurance
Cash refunds to policyholders, amounting to nearly $13,000,000 since organization. have realized savings to them of at least 20% of the standard stock company insurance cost.

Hollingsworth on Wheels For Lickerins
My unsurpassed service in rewinding Lickerins has pleased the largest and most exacting mills. You are due yourself an investigation.
Write for Testimonials
Box 69, Greenville. S. C.

MODEL J
Cuts ¾ in. Letters
4 Lines—Any Length
Bradley Stencil Machines
Cut ½ in., ¾ in., 1¼ in., and 1½ in. Letters
OVER 30,000 IN USE
DROP FORGED STEEL PUNCHES
ALL PARTS INTERCHANGEABLE
MACHINES SENT ON TRIAL
FREIGHT PAID BY US BOTH WAYS
ROUND AND HORIZONTAL MODELS
Mark Your Shipments Right—Buy a Bradley
A. J. BRADLEY MFG. CO.
105 Beekman St. New York
Bradley Oil Stencil Board
Bradley's Two-in-One Stencil Ink
The Bradley Ball Stencil Pot
Shippers' Supplies
Write for Samples and Prices



K-A Electrical Warp Stop For Looms
is backed by twenty years of experience and steady growth. It is adopted by representative mills weaving cotton, silk, worsted and woolens.
R. I. Warp Stop Equipment Co.
CHARLOTTE ATLANTA PAWTUCKET

Members American Society Landscape Architects
E. S. DRAPER
1516 E. Fourth St.
CHARLOTTE, N. C.
101 Marietta Bldg.
ATLANTA, GA.
LANDSCAPE ARCHITECT and ENGINEER
Town Planning and Mill Village Developments
Parks, Real Estate Subdivisions and Cemeteries
Resort Hotels and Country Clubs
Private Estates and Home Grounds
Complete Topographic Surveys
General Designs, Planting, Grading and Detail Plans
Supervision of Landscape and Engineering Construction
Sewer and Water Development
Largest Landscape Organization in the South

**Englewood, Tenn.**—The Eureka Cotton Mills here are changing over their knitting machines from eight cuts to 10 so that they can make lighter weight garments in addition to the heavy goods now manufactured.

**Griffin, Ga.** — Recent improvements at the Georgia-Kincaid Mills, include the completion of a new office building, a new school and a cafeteria. The machinery that has been used in the bleaching plant here will be moved to the new bleachery just built at the company's plant at Experiment, Ga., and the plant here will be converted into a dyehouse.

**Randleman, N. C.**—The Deep River Mills have completed the erection of a two-story dyehouse, 50x140 feet which will be used for dyeing and slashing. The mills will install 2 Martin dyeing machines, 2 slashers and 4 beam warpers.

The mills are also adding 2,116 spindles and carding machinery, as previously reported.

**Elkin, N. C.**—The Chatham Manufacturing Company, recently received an order for 82,000 blankets for the United States Navy. The blankets are being manufactured in Elkin and finished in the plant at Winson-Salem. This is the largest order ever received by the company since it was established in 1887.

**Sweetwater, Tenn.**—The Sweetwater Woolen Mill has started work on extensions involving an expenditure of approximately $40,000. Five additional buildings will be erected, all of brick. A two-story structure 168x37 feet, is included. Additions to the finishing room and dyehouse are expected to be completed by the first of the year. The American Textile Woolen Co. intends that all dyeing and finishing will be done at Sweetwater instead of at Louisville, and that carding, spining and weaving will be performed at the Rossville mill.

**Anderson, S. C.**—The Appleton Company, of Lowell, Mass., makes formal announcement today of its purchase of the Brogon Mills, which have been incorporated as the Appleton Manufacturing Company. The new plant has 900 looms, 30,468 spindles, and employs 600 people negaged on flannellettes and some other yarn dyed specialties. Mill experts look upon it as one of the best equipped soft spun yarn plants in the country.

It is to be placed in charge of D. D. Little a very competetnt manufacturer, who has handled the Florence Mills of Forest City through a period of very successful years. He will be asissted by his son, Hugh F. Little.

Plans for enlarging the mill are now being prepared.

The selling will be done through

Catlin & Co., who now become the largest handlers of cotton napped fabrics in this country. Beside the Appleton Company output of Lowell, the house also sells the very large product of the Tremont & Suffolk Corporation, a 200,000 spindle concern.

Announcement of the selling plans for a new season will be made soon when it is expected that it will develop that the combined lines of the Eastern and Southern plants of the Appleton embrace many new fabrics, indicating a completely new trend in flannellette styling, construction and coloring. Intensive research of an expensive character has been going on for some time under the direction of the selling agency to create new products having all the serviceable qualities of past lines and all the style appeal that is now expected by buyers catering to the high class quality flannellette markets.

In addition to availing itself of the lower costs of a Southern plant the house proposes to restyle and reconstruct almost all of the output, while the Eastern plant will eventually be devoted to fancies of a more intricate character than is usually associated with napped fabrics.

---

**Cramerton, N. C.**—A sketch of the immense future development of the Cramerton Mills, Inc., of this place, as given in the illustrated brochure just published, shows that in addition to the two mills now existing, there will be four or five other plants erected. According to the map, one of these two will be near the junction of the Cramerton-McAdenville Road near Goves store and the other two will be across the South Fork from the rpesent village, this substantiating the rumor that there are big developments in store for that section.

One of the mills is to be located up the river from the present crossing on what is called in the plan the State Highway to Charlotte, crossing the river about half way between Cramerton and McAdenville.

Two others plants are indicated as being located across the fork on the Southern Railroad on the Armstrong lands recently secured by the Cramer interests.

## Want Rayon Plant

Announcement that North and South Carolina textile interests are making an investigation of rayon and rayon processes and costs, with the possible decision to build a rayon plant somewhere in the Carolinas as the outcome, has been followed by a number of offers from cities of the section to finance or to aid in financing the plant if located within their respective territories. It is understood that Winston-Salem, Charlotte, Asheville, Wilmington, High Point and Fayetteville in North Carolina, Richmond, in Virginia, and probably some South Carolina cities are asking for a location of the plant.

J. E. Latham, prominent cotton factor, a resident of Greensboro, and part owner of the Pomona Mills, is among the textile men of the two Carolinas who interested in rayon investigations being carried on by textile factors of the two States, it was learned today, and he said that the plant in Huntsville uses a considerable amount of rayon.

So far the investigation, the cost of which is being borne by manufacturers and capitalists of the two States, and directed by Smith Richardson, a capitalist, of Greensboro, have shown the possibilities for rayon plants ebing established in the two States or in Virginia are good, those behind the movement state, but they wish to eliminate as far as possible any error in their calculations, in order that no false steps be taken.

Water in large quantity is needed, also wood pulp, and it appears likely that plants will be established in proximity to large streams. The question of freight rates, especially on coal, is being carefully considered, as well as on other commodities. It is recognized that the industry, if well established in the Piedmont section of the South, will have to be on a solid basis, with the best processes used, and that technicians used must be the best. A great deal of consideration is being given to that phase.

## Nashville Mills on Full Time

Nashville, Tenn.—Business is reported good by hosiery manufacturers in this market. The mills here have an output of about 3,000,000 dozen pairs of hosiery annually. Large Eastern cities take a considerable part of this output and distribute it to the trade.

The recent break in the cotton market has had an important influence on the hosiery trade. Contracting for next spring's requirements is reported very slow, as jobbers are inclined to await developments before placing orders.

The volume of orders for next spring is reported far behind the sales that had been made at this time last year. Shipments on fall contracts are being made freely and this enables the mills to run on practically full time.

As soon as the cotton situation becomes clarified, it is believed that 1926 business will take on new life and that contracts will be booked on a large scale. The outlook is regarded as very satisfactory for good business, and all that is needed to develop this demand, it is thought, is a settled market.

Some export trade on hosiery is reported in the local market. Important sales are mentioned in South America.

DRUIDOAK
LOOM LEATHERS
Highest Grade Oak Tanned
For Cotton, Wool and Silk Looms

Check Straps, Hold-ups,
Dobby Straps, Bumpers,
Lugs, etc. Jack Straps

The Druid Oak Belting Co., Inc.
Baltimore——Boston

UNIFORM IN APPLICATION
Victrolyn
Reg. U. S. Patent Office
A dependable assistant in sizing Cotton Warps
SOLE MANUFACTURERS
Bosson & Lane
Works and Office, Atlantic, Mass.

THE TRIPOD PAINT COMPANY
—MANUFACTURERS—
ATLANTA GEORGIA
MILL WHITES, PAINTS, STAINS, Etc.
Write for Prices and Free Samples

EMMONS LOOM HARNESS COMPANY
The Largest Manufacturers of Loom Harness and Reeds in America
Loom Harness and Reeds
Slasher and Striking Combs, Warps and Leice Reeds,
Beamer and Dresser Hecks, Mending Eyes, Jacquard Heddles
LAWRENCE, MASS.

Reliable Humidifying Devices
Since 1888
also
Better Textile Dryers
Manufactured by GRINNELL COMPANY, Inc.
AMERICAN MOISTENING COMPANY
Atlanta Georgia
Boston Massachusetts
Charlotte North Carolina

WANTED
First class card grinder. Good pay. Short hours. Apply Home Cotton Mills, 2400 South Second St. Saint Louis, Missouri.

WANTED
Master Mechanic for Southern Mill. 80,000 spindles. Apply to "L", care Textile Bulletin.

## Efficiency in Dyehouses

(Continued from Page 12)

cal products. Where quantities of chemicals such as red liquor, black liquor, nitrate of iron, zinc powder, sodium peroxide, sodium hydrosulphite, etc., are used, it is essential that they should be of a known (definiie) chemical strength and purity, depending upon the purpose for which they are to be used. In this way the buying of the materials is carried out efficiently, and the processes for which they are used can be conducted in a regulated and accurate manner. In examining dyestuffs a chemical determination is possible in many cases, but in others comparative dye trials are to be preferred, viz., when examining mixtures of dyestuffs for certain products like logwood, in which there are other coloured substances besides the principal constituent which are extracted with water, etc. Such comparative dyeings should be carried out under as nearly the same conditions as the practical dyeing, and the conditions under which different samples of the same dyestuff are examined should always be the same. From these results much useful information as to the strength, solubility and the best conditions for dyeing can be obtained.—Textile Recorder.

## Discusses Probable Price Of Cotton

NOW that the cotton trade is confronted with the physical task of absorbing a bumper cotton crop, C. T. Revere of Munds & Winslow points to the more important problem of determining the price level at which it will enter into effective consumption. The policies of the cooperative marketing associations, statistics of supply, aspects of demand, state of trade, style changes, foreign growths, and the grade of the crop are some of the paramount angles involved, his observations indicate, in addition to numerous other factors.

"This season should provide a test of the economic merits of the cooperative marketing movement," Mr. Revere comments. "Heretofore the associations have been aided by short crops and an avid demand. It will be interesting to watch the outcome in a season characterized by a surplus and closer price scrutiny by spinners."

Readjustments in the textile industry that may require considerable time to effect. Mr. Revere writes, have been made imperative by the unexpected projection of such a large supply of cotton. "The industry might have been able to take care of a crop of 15,250,000 bales," he states, "or even more, if it had had ample notice of an impending supply of this size. It may be quite another matter, however, to absorb this quantity of cotton when the trade is so suddenly confronted by its magnitude. Last week we called attention to the increased margins which should act to encourage increased manufacturing operations. Just how much the Bureau forecast of last Monday will serve to alter the policies of buyers remains to be seen. We are believers in a large demand for goods and a heavy consumption of raw cotton.

"There is one feature of the cotton division of the textile industry that calls for close observation. This is the frequent changes of fashion. Fifteen or 20 years ago when large cotton crops were the rule rather than the exception, manufacturers were able to make their plans for months ahead owing to the steady demand for staple goods. Now the mill executive must adjust himself to the whims of fashion and manufacturing policies must be characterized by unusual caution. This is the day of novelties instead of staples. The demand for print cloths which has been the outstanding development of the past few months, is dedicated by the craze for novelties. Fashion called for unique designs at a moderate cost. These could be supplied only by printing, and an insatiable demand for print cloths was the result. No one knows what construction or fabric will have the call a few months hence. The cotton will be consumed, but adjustments may cause temporary dislocation.

"We might take a brief survey of the statistics of supply. Assuming that the crop is 15,226,000, we may add to this minimum of 1,000,000 for linters and the world carryover of 2,880,000 at the end of last season. This would give a total of about 19,106,000, compared with a total available supply last year of 16,809,000. Going back to the season of 1920-1921 we find that the carryover, ginnings and linters gave us the record total of 19,786,000. In 1914-1915, when we raised our record crop, total supply, including carryover, yield and linters, was 18,977,000 bales. If ginning this season should reach approximately 16,000,000 bales, as has been pointed out above, the supply this season would be above the peak for all time.

"With regard to outside growths, it is largely in the nature of conjecture to attempt an estimate of the

INSPECTING
SEWING
BRUSHING
SHEARING
SINGEING
PACKAGING
FOLDING

Curtis & Marble Machine Co.
Textile Machinery
Cloth Room and Packaging Machinery
WORCESTER, MASS.
SOUTHERN OFFICE
1000 Woodside Bldg. Greenville, S. C.

DOUBLING
MEASURING
WINDING
STAMPING
TRADEMARKING
CALENDER
ROLLING

SCOTT TESTERS
The Standard of The World For Tests of Fabrics,
Yarns, Twines, Etc.

Manufactured By
HENRY L. SCOTT & CO.
101 Blackstone St.
PROVIDENCE, R. I.

Represented in New York By
United States Testing Company, Inc.
316 Hudson St., New York City

Manufacturers of Speeders, Bobbins, Cap Spinning Bobbins, Skewers, Warp Bobbins, Filling Bobbins for Northrop Looms, Twister Bobbins, Twister Spools, Warper Spools, Comber Rolls, Quills, Underclearer Rolls (plain or covered).

U S Bobbin & Shuttle Co.
57 EDDY STREET
PROVIDENCE, R. I.

SHUTTLES
We make a specialty of Shuttles for all makes of looms, both plain and automatic. Correspondence solicited.

"HIGH GRADE"
BOBBINS
SPOOLS
SHUTTLES
SKEWERS
ROLLS, ETC.
OF EVERY DESCRIPTION

THE
DAVID BROWN COMPANY
Lawrence, Mass.
Correspondence Solicited Catalog on Request

AUTOMATIC SHUTTLES
Our Automatic Shuttles are giving Perfect Satisfaction in Leading Mills throughout the country on all classes of work

total production. Substantial increases are indicated in Egypt, India, Asiatic Russia, Brazil and some of the minor producers. There is enough evidence to warrant the assumption that the supply furnished by other countries will be somewhat larger than last year, although there is as yet no justification for assuming that countries outside of the United States this year will produce as much as 14,000,000 bales, which is the figure named by one authority. If, however, this maximum should be reached, the world production of cotton, including linters, this season would be in excess of 30,000,000 bales, exceeding any annual consumption in history by several million bales.

"Broadly speaking, this is a low grade crop. Ginnings since Oct. 1 over a large part of the Belt, will consist largely of cotton below middling, and much of it will be untenderable. It is too early to permit the formation of a definite idea regarding the effect of this on the contract price of cotton. If there are enough low grades of a tenderable character that are not wanted by manufacturers at the time, price depression would be the logical inference. If, on the other hand, the demand from manufacturers exhausts the high grades and there is a disposition to buy medium and low grades freely, the weight on the contract market should be inconsiderable and temporary.

"The attitude of foreign buyers toward American cotton will be a strong determining price influence. It is not improbable that at a price foreign consumers will take more than 9,000,000 bales of American cotton. Exports, including linters, might even run close to 10,000,000 bales.

"Passing over fluctuations caused by incidental factors and market technicalities, it would seem that cotton is now in a position where ultimate price improvement would have to spring from the attitude of the speculative investor. With a surplus indicated over current needs, buyers must be found for this surplus. It would be as futile as guessing in midsummer on the size of the crop to attempt to name that level now. Our own feeling now is that the investment basis is not yet in sight, and that inasmuch as vision is unlikely to be rewarded under the circumstances, patience will be the crowning virtue. It is best to wait for developments."

## Cotton Report Shows Increase

Washington, Nov. 9.— A probable coton production of about 15,386,000 equivalent 500-pound bales this year, if average influences prevail during the remainder of the season, is indicated, the Department of Agriculture announced today, by reports as of November 1 on condition, abandonment, probable yields, ginnings and other factors.

A probable yield of 166.4 pounds of lint cotton per harvested acre is indicated, compared with 164.7 lbs. indicated a fornight ago, and 157.4 pounds, the final yield per acre last year.

A fortnight ago a crop of 15,226,000 bales and an acre yield of 164.7 lbs. were indicated, while last year's crop totalled 13,267,936 bales.

The indicated production, based on November 1 condition, was announced as follows:

North Carolina, 1,080,000.
Virginia, 48,000 bales.
South Carolina, 860,000.
Georgia, 1,150,000.
Florida, 42,000.
Misouri, 245,000.
Tennessee, 485,000.
Alabama, 1,290,000.
Mississippi, 1,885,000.
Louisiana, 895,000.
Texas, 4,100,000.
Oklahoma, 1,520,000.
Arkansas, 1,480,000.
New Mexico, 61,000.
California, 130,000.
All other states, 21,000.

About 68,000 bales additional to California are being grown in Lower California, Old Mexico.

### Large Gains Made in Ginning Figures.

Cotton ginned from the growth of 1925 prior to November 1, totalled 11,198,660 running bales, counting round as half bales, the Census Bureau today announced. Ginnings were 9,715,643 bales to that date last year ,and 7,556,042 in 1923.

Total ginnings include 184,597 round bales, counted as half bales, compared with 240,661 for 1924 and 199,236 for 1923 to November 1.

## Cone Group of Mills Thirty Years Old

(Continued from Page 18)

seven printing machines, bleachery, dyeing and finishing apparatus. At White Oak 160,000 yards of denims are made daily; at Proximity Mills, the daily production is 90,000 yards of denims. Daily capacity of three mills is 375,000 yards.

Their yearly consumption of cotton is 82,000 bales, the yearly production of denims, 75,000 yards. Each 50-yard piece of denim contains from 1,800 to 2,500 warp threads, and from 40 to 50 filling threads to the inch.

One of the largest users of indigo dyes in the world, the mills buy over 2,000,000 pounds of indigo annually. The total consumption is more than 250 tons a day. Of burlap baling, 400,000 yards are used per annum.

### "Through a Yard of Denim."

After thus briefly giving the story of the mills and Moses and Ceasar Cone, the brochure then explains, with the aid of numerous photographs, how denim is actually produced. "When Alice in Wonderland stepped through the Looking Glass," says the introductory remark, "she experienced no more surprises, nor did she encounter a more interesting lot of folks than you will meet in stepping through and back of a yard of denim." Every step in the manufacturing process is illustrated, from the unloading of the baled cotton from cars to the machines that fold the finished cloth. There is a separate chapter on printing.

The story of how the Cone mills foster the welfare of their workers, already referred to, occupies a large section of the book.

*Better Lubrication at Less Cost per month*

**Are your bearings gluttons for oil?**

Do your men have to keep constantly feeding the hungry bearings with liquid oil?

If so, change their diet to

TRADE MARK REGISTERED IN
**NON-FLUID OIL**
UNITED STATES PATENT OFFICE

MODERN TEXTILE LUBRICANT

***That stays in bearings***

and you will have to feed them only one-third to one-fifth as often as with liquid oil.

You will save time, money and lubricant. Your bearings will be better lubricated; friction will be minimized and power losses lessened.

Then, too, your losses from oil stains on goods in process will be practically eliminated —for NON-FLUID OIL stays in the bearings and off the product.

Test NON-FLUID OIL at our expense —send in coupon for free sample and bulletin, "Lubrication of Textile Machinery."

N. Y. & N. J. Lubricant Co.

Please send bulletin "Lubrication of Textile Machinery" and samples of NON-FLUID OIL for purposes checked below:—

☐ PICKERS
☐ CARDS
☐ SPINNING FRAMES
☐ LOOMS
☐ TWISTER RINGS
☐ BALL BEARINGS
☐ SHAFTING
☐ MOTORS
☐ CHAIN DRIVES

NAME ____________________
MILL NAME ____________________
ADDRESS ____________________

SO. T. B. 11-12-25

NEW YORK & NEW JERSEY LUBRICANT CO.
MAIN OFFICE: 292 MADISON AVE., NEW YORK, N.Y WORKS: NEWARK, N.J.
Warehouses:
CHICAGO, ILL. ST. LOUIS, MO. ATLANTA, GA.
PHILADELPHIA, PA. KANSAS CITY, MO. CHARLOTTE, N.C.
PROVIDENCE, R.I. NEW ORLEANS, LA. GREENVILLE, S.C.

DEXTRINES
GUMS

We have been making high grade Dextrines and Gums for over half a century.

In addition to our standard products, we are equipped to make whatever special Dextrines are called for by the particular requirements of the customer.

STEIN, HALL & CO., INC.
61 BROADWAY, NEW YORK
Boston Charlotte, N. C. Chicago
Providence Troy Philadelphia

## Cotton Mill Processes and Calculations

(Continued from Page 21)

bobbin to find how many revolutions it takes to lay this amount on an empty bobbin.

(4) As the bobbin leads, the bobbin speed must be this number added to the speed of spindle.

(5) Considering the bobbin as a driver, with the speed found in (4), calculate the required speed for the bobbin driver which is on the sleeve.

(6) The following formulas have already been deduced:

(Holdsworth) $s=\frac{1}{2}(b-m)$

(Tweedales) $s=\frac{m-mr-b}{r}$

(Daly) $s=\frac{m-b}{\frac{a}{c}}-m$

When b is the value obtained in (5), m is the revolutions of main shaft, r=ratio of differential train in Tweedale's; c and a are the circular rack and pinion in Daly's; s= revolution of the portion of the differential driven from the cones. In the Holdsworth it is the sun wheel, in the Tweedales the hollow shaft, and in the Daly the hollow shaft inside the sleeve. Substituting in the formulas we obtain the required values of (s).

(7) Determine the velocity of the bottom cone when the belt is at the large end of the driving cone and the small end of the driven cone which is usually the bottom one.

(8) Knowing the revolutions of the bottom cone and the required value of (5), the size gear to be put on the end of the bottom cone can be determined.

137. To illustrate this system, the following calculations for the bottom cone gear of a Whitin machine, which uses a "Holdsworth" type of differential, on given:

Speed main shaft=367
Spindle driving gear=60
Spindle shaft gear=40
Spindle skew bevel=46
Spindle bevel=22

Speed of spindle$=\frac{367\times60\times46}{40\times22}=1151$ R.P.M.

Roving to be made, 3.00's. Twist, 2.12. Twist gear, 32.
Middle top cone gear=46
End top cone gear=78
Large gear on front roll=130

Speed of front roll$=\frac{367\times32\times78}{46\times130}=153.18$ R.P.M.

Dia, front roll, 1⅛". Circumference, 3.53".
153.18×3.53=541.1 inches roving per min.
Dia. bobbin, 1 13/32". Circumference, 4.44".
541.1÷4.44=122=rev. of bobbin in excess of flyer.
1151+122=1273=rev. of bobbin for first layer.
Bobbin bevel gear=22
Bobbin skew bevel=46
Bobbin shaft gear=40
Bobbin driver=

Speed of bobbin drives$=\frac{1273\times22\times40}{46\times60}=406$ R. P. M.

The formula for the Holdsworth differential is

$s=\frac{1}{2}(b-m)$, where,

s=speed of sun wheel, b=speed of bobbin drivers, m=speed of the main shaft.

Therefore,

$s=\frac{1}{2}(406-367)=19\frac{1}{2}$

Now if the large end of the top cone is $5\frac{1}{4}''$ and the small end of the bottom cone is $3\frac{5}{8}''$ in diameter respectively, the revolution of bottom cone when the belt is on the large end of the top cone will be

$$\frac{367\times32\times5\frac{1}{4}}{46\times3\frac{5}{8}}=370 \text{ R. P. M.}$$

Call the bottom cone gear L. It drives a 70T gear on an intermediate shaft. On the other end of the intermediate shaft is a 64 gear that drives a 56 gear on the small jack shaft. The sun wheel has 112 teeth and is driven by a 14 gear from this jack shaft. As the sun wheel is required to make $19\frac{1}{2}$ revolutions per minute for the first layer on the bobbin we have:

$$\frac{370 \text{ x } L \text{ x}56 \text{ x } 14}{70 \text{ x } 64 \text{ x } 112}=19\frac{1}{2}$$

L=33.73 or 34, whiich is the required gear to be used on bottom cone.

**General Data.**

138. Fly frames are generally about $3\frac{1}{2}$ feet wide, and vary in length according to number of spindles and distance apart, spindles are placed, (known as "gauge or space of spindles.") The width allowed for a slubber must be more than the bare width of machine, because three lines of cans must stand behind it. Only one can of sliver is fed to one spindle, but, as there are about 8 spindles to each 36 inches in length of frame, and as cans are usually 12 inches in diameter, the cans will have to stand three deep to supply the sliver. Hence the net width allowed for each slubber including cans must not be less than 6 feet.

The length of any frame may be closely approximated by multiplying half the number of spindles by the gauge, and adding to the result 3 feet for gearing, driving, pulley, etc. The reason for using half the number of spindles is, that spindles are in two rows. If there were only one row, the whole number of spindles would be multiplied by the gauge. Suppose a frame contains 60 spindles, with gauge of 6 inches. The length of frame would be 30 x 6÷12=15 feet+3 feet=18 feet total.

The height of a frame is to top of roller beam about 4 feet for fine roving, and $4\frac{1}{2}$ feet for intermediate and slubbing. Top of creel is $6\frac{1}{2}$ to 7 feet high.

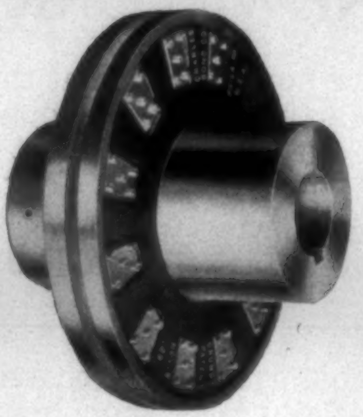
The weights of roving frames are expressed in pounds per foot in length or pounds per spindle.

139. The bottom rolls are supported in stands made fast to roller beam. They stand from 18 inches to 22 inches apart according to gauge of frame. This distance from centre to centre is called by the English the "staff" of the frame.

There is always a definite number of spindles between stands. Slubbers usually have 4, intermediates 6, and fine roving 8. If the slubber is 8 inch gauge, 4 spindles (2 in front and 2 in back row) will ccupy 16 inches, and the stands are 16 inches, from centre to centre, and the gauge of the machine is sometimes expressed as "4 spindles in 16 inches," instead of "8 inch gauge." This is really the better way, as it gives information on two points at once. If a roving frame is $4\frac{1}{2}$ inch gauge, 8 spindles (4 in front and 4 in back row) will occupy 18 inches, and the gauge may be expressed as "8 spindles in 18 inches."

(Continued next Week)

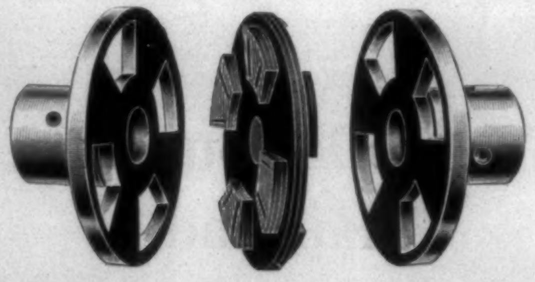
For That Direct Drive



Grundy Patent Flexible Insulated Coupling

To the best of our knowledge no other coupling combines all the requirements that have made "Grundy" the recognized leader. Check the following salient features and prove to yourself that only in a "Grundy" will you get all you want in a coupling:

1. Takes care of uneven strains.
2. Self-adjustment insures perfect alignment of shafts.
3. Can be used whether insulation is required or not.
4. Perfectly balanced, and adapted for revolving at high speeds.
5. Runs in either direction; is close connected; easy of access; practically no repairs.
6. There are no projections to cause damage.
7. Maintains a positive and silent drive; free from objectionable hammer action features.



Cast Iron Leather Cast Iron

EVIDENCE

One large group of Southern Cotton Spinning Mills after testing out the Grundy Coupling ordered 550 for use in their various mills. Why not put a test in your mill and see the superiority of this coupling as it works under your own conditions?

Write for Booklet "F"

*Manufactured in U. S. A. exclusively by*

CHARLES Bond COMPANY

*Leather Curriers, Importers and Belting Manufacturers*
*617 Arch Street* *Philadelphia, Pa.*

# *The* BIGGEST *$2.50 in* NEW YORK

IF you have never stopped at the popular Hotel Martinique, you probably don't know that you can live right at the right price while you are in New York.

Comfortable, cheerful rooms $2.50 and up. Club breakfast 45c—table d'hote dinner $1.25. Also a la carte at moderate prices.

The Hotel Martinique is located right in the heart of the busy shopping districts, just across the street from the famous Hotel McAlpin with all business and theatrical centres readily accessible.

A. E. SINGLETON, *Res. Mgr.*

*"The BEST without extravagance"*

## Hotel Martinique

*Affiliated with Hotel McAlpin*

**Broadway—32nd to 33rd Sts.—New York**

## Attractive Winter Excursion Rates

VIA

## Norfolk-Southern Railroad

To destinations in North Carolina, South Carolina, Georgia, Florida and Alabama

Attractive schedules to
Pinehurst, N. C., New Bern, Beaufort and
Morehead City, N. C.

Ideal locations and ample facilities for conventions at either point.

For tickets or information, apply to any ticket agent, or

**J. F. DALTON**
**General Passenger Agent**
**Norfolk, Va.**

## Index To Advertisers

**Where a — appears opposite a name it indicates that the advertisement does not appear in this issue.**

Page

—A—
Akron Belting Co. 33
Allis-Chalmers Mfg. Co. 18
American Cellulose & Chemical Co. 6
American Laundry Machinery Co. —
American Moistening Co. 25
American Textile Banding Co. —
Amory, Browne, & Co. 36
Aluminum Paint Co. 4
Arabol Mfg. Co. —
Arnold, Hoffman & Co. —
Ashworth Bros. 42
Atlanta Brush Co. —
Atlanta Harness & Reed Mfg. Co. 38

—B—
Bahnson Co. 1
Billington, James, H. Co. 35
Bancroft, Jos. & Co. —
Bradley, A. J. Mfg. Co. 24
Barber-Colman Co. 42
Barber Mfg. Co. —
Blackmer Rotary Pump Co. 32
Bosson & Lane 25
Brown, David Co. 26
Bond, Chas. Co. 29
Brown St. Onge Co. —
Broadway Central Hotel 38
Butterworth, H. W. & Sons Co. —

—C—
Catlin & Co. 37
Carrier Engineering Corp. —
Charlotte Mfg. Co. 2
Charlotte Leather Belting Co. —
Chicago Belting Co. —
Chicago Board of Trade —
Chicago Fuse Mfg. Co. —
Cocker Machine & Foundry Co. —
Collins Bros. Machine Co. —
Corn Products Refining Co. 35
Courtney, Dana S. Co. —
Crompton & Knowles Loom Works —
Crump, F. M. & Co. —
Curran & Barry 36
Curtis & Marble Co. 26
Cyclone Fence Co. —

—D—
Dary Ring Traveler Co. 37
Davidson, Jos. L. Co. 38
Deering, Milliken & Co., Inc. 36
Denison Mfg. Co. 16
Dixon Crucible Co., Jos. 34
Dixon Lubricating Saddle Co. 30
Drake Corp. 31
Draper Corp. —
Draper, E. S. 24
Detroit Graphite Corp. 44
Dronsfield Bros. —
Druid Oak Belting Co. 25
Duplan Silk Corp. 12
DuPont de Nemours, E. I. & Co. 15

—E—
Eclipse Textile Devices, Inc. —
Economy Baler Co. 42
Emmons Loom Harness Co. 25
Engineering Specialties Corp. —
Entwistle, T. C. Co. —

—F—
Fafnir Bearing Co. —
Fales & Jenks Machine Co. —
Farish Co. 24
Ferguson Gear Co. 16
Ford, J. B. Co. 31
Fournier & Lemoine —
Franklin Process Co. —

—G—
Garland Mfg. Co. —
General Dyestuff Corp. 2
General Electric Co. 3
Georgia Webbing & Tape Co. —
Graton & Knight Mfg. Co. —
Greensboro Loom-Reed Co. 33

—H—
Hart Products Corp. 16
H. & B. American Machine Co. 10
High Point Loom Reed & Harness Co. —
Hollingsworth, J. D. 24
Hopedale Mfg. Co. —
Houghton, E. F. & Co. 11
Howard Bros. Mfg. Co. —
Hyatt Roller Bearing Co. —

—I—
International Textile Exposition 13
Industrial Fibre Co. —

—J—
Jacobs, E. H. & Co. —
Johnson, Oliver & Co. —
Jones, W. A. & Co. —
Jordan Mfg. Co. —

—K—
Kaumagraph Co. —
Keever Starch Co. —

Page
Klauder-Weldon Dyeing Machine Co. 32
Knitting Arts Exhibition 5
Klipstein, A. & Co. —

—L—
Ladew, Edward R. Co. 21
Lane, W. T. & Bros. 43
Landers Bros. Co. 23
Langley, W. H. & Co. 36
Leslie, Evans & Co. 36
Lestershire Spool & Mfg. Co. —
Liberty Mutual Insurance Co. 24
Link-Belt Co. 9
Lowell Shuttle Co. —

—M—
Macrodi Fibre Co. —
Marston, Jno. P. Co. —
Mathieson Alkali Works —
Mauney Steel Co. —
Martinique Hotel 30
Memphis Cotton 39
Merrow Machine Co. 37
Mississippi Cotton —
Moreland Sizing Co. 37
Morse Chain Co. 43
Mossberg Pressed Corp. 34
Myles Salt Co., Ltd. 31

—N—
National Oil Products Co. 20
National Aniline & Chemical Co. —
National Ring Traveler Co. 37
Newburger Cotton Co. 39
N. Y. & N. J. Lubricant Co. 27
North Carolina Cotton 39
Norwood Engineering Co. 38

—P—
Page Fence & Wire Products Assn. 34
Page-Madden Co. 33
Paige, Schoolfield & Co. —
Parker, Walter L. Co. —
Parks-Cramer Co. —
Penick & Ford, Ltd. 31
Plimpton Lift Truck Corp. —
Puro Sanitary Drinking Fountain Co. —

—R—
Reeves Brothers, Inc. 36
R. I. Warp Stop Equipment Co. 24
Rice Dobby Chain Co. 33
Roessler & Hasslacher Chemical Co. —
Rogers Fibre Co. 14
Root Co. —
Roy, B. S. & Son —

—S—
Saco-Lowell Shops 19
Sayles Finishing Plants —
Scott, Henry L. & Co. 26
Norfolk-Southern Railway 30
Seaboard Ry. —
Sellers, Wm. & Co. —
Seydel Chemical Co. 32
Seydel-Woolley Co. —
Siggers & Siggers 33
Southern Artsilk, Bleach & Dye Works, Inc. 37
Sirrine, J. E. & Co. —
Slip-Not Belting Corp. —
Sonoco Products 8
Sonneborn L. Sons 23
Southern Ry. —
Southern Spindle & Flyer Co. —
Slaughter, G. G. 44
Stafford Co. —
Steel Heddle Mfg. Co. 17
Stein, Hall & Co. 28
Sydnor Pump & Well Co. 33

—T—
Terrell Machine Co. —
Texas Cotton —
Textile Finishing Machinery —
Textile Mill Supply Co. —
Thomas Grate Bar. Co. 33
Tolhurst Machine Works —
Tripod Paint Co. 25

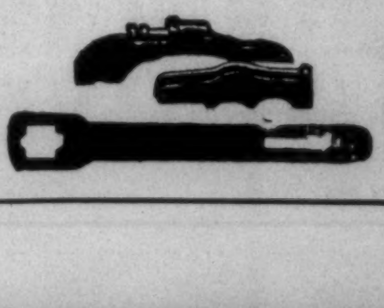
—U—
United Chemical Products Co. 43
U. S. Bobbins & Shuttle Co. 26
U. S. Ring Traveler Co. 38
Universal Winding Co. 38

—V—
Victor Ring Traveler Co. —
Virginia Machinery & Well Co. —
Vogel, Joseph A. Co. —

—W—
Washburn —
Watts, Ridley & Co. 37
Wellington, Sears & Co. 36
Whitin Machine Works —
Whitinsville Spinning Ring Co. 31
Williams, J. H. Co. 2
Wilts Veneer Co. 38
Wolf, Jacques & Co. —
Woods, T. B. Sons Co. 43
Woodward, Baldwin & Co. 36

## DIXON LUBRICATING SADDLE CO.

**BRISTOL, RHODE ISLAND**



**Use Dixon Patent Stirrup Adjusting Saddles, the latest invention in Saddles for Top Rolls of Spinning Machines. Manufacturers of all kinds of Saddles, Stirrups and Levers.**

**WRITE FOR SAMPLES**

Bigger returns from the labor of some men than from the labor of others makes a difference in their earning power, and for like reasons textile mills more and more specify the special purpose

**WYANDOTTE TEXTILE ALKALIES**

because they show better returns on the amount invested.

"Wyandotte"
The J. B. Ford Company.

The J. B. FORD CO., Sole Mnfrs.
Wyandotte, Michigan

SALT
SPECIAL GRADE
FOR TEXTILE MILLS
FREE OF INSOLUBLES—
MYLES SALT CO. LTD.
NEW ORLEANS U.S.A.

SPINNING RINGS
TWISTER RINGS
SILK RINGS
DIAMOND FINISH
TRAVELER CLEANERS
TRAVELER CUPS
GUIDE WIRE SETS
WHITINSVILLE SPINNING RING CO.
WHITINSVILLE, MASS
SPINNING RING SPECIALISTS FOR MORE THAN FIFTY YEARS

## Why Cotton Mills Have Been Moving South

(Continued from Page 14)

and their general lot in the mills, as against their circumstances on the farm whence they came and whither they must go if they leave the mills. There is in the South now a large class of people who have been born and reared in mill villages and know nothing else; but they are being constantly recruited from the farms, while some of their numbers go back to the farms every year to try it over again with the little savings they have accumulated. Most of these recruits are the failures among the tenant farmer class—a desperately poor, abysmally ignorant, people. The mill is the only place where they can all find employment. It takes them all in, men, women and children over 14, or, in the case of some mills, children over 16. The individual wage is small, but a father and mother with six children, two of whom are of working age, can earn from $250 to $300 per month, and live in a better house than never before, with water and electric lights covered by the rental of $5 or $6 per month, all repairs taken care of promptly by the mill, and with coal and firewood delivered at their doors at wholesale rates.

### The Mill Worker Type.

It is true the meagre savings of these people seem to indicate that their wages are barely sufficient to enable them to live. But they are as a class thriftless and shortsighted, and they have little incentive to save. Thrifty, foresighted farmers buy their farms; the mill workers are recruited largely from the failures among the thriftless tenant class. Furthermore, the paternalistic attitude of the mill, while it has certain advantages, robs them of incentive to save. They cannot afford to own homes; taxes and upkeep would amount to more than their rent. If they get sick and have money in the bank, they have to spend it, but, if they have already spent their money for pleasures, they are cared for by the mill, so, from their point of view, they might as well spend it as they get it. Again, they are unaccustomed to handling much money, and their wages offer opportunities for luxuries long desired in vain. The large number of garages provided by many of the mills for cars owned by their employees indicates the direction in which much of their money goes. One mill president told me of a couple in his mill, both weavers, who had recently paid $4,200 cash for a new Lincoln. "I'm not proud of it," he said, "and I don't like to have them identified with my mill, but that's the way it goes." Why should they strike for more?

### Costs Less to Live in the South.

Moreover, the living cost in the Southern mill country is considerably lower than it is in New England. In the South a large majority of all mill help—possibly 75 per cent or 80 per cent—lives in villages owned by the mills. Rent will average close to 25 cents per room per

GLYCERINE GLYCERINE
GLYCERINE GLYCERINE GLYCERINE
GLYCERINE GLYCERINE GLYCERINE

DRAKE CORPORATION
HIGHEST QUALITY GLYCERINE
sold on
GUARANTEED ANALYSIS
BEEF TALLOW—JAPAN WAX
and
QUALITY WARP DRESSINGS
PROPORTIONED TO SUIT THE INDIVIDUAL REQUIREMENTS
of the
PARTICULAR TEXTILE MILL
*"Warp Dressing Service Improves Weaving"*
NORFOLK - - VIRGINIA

GLYCERINE GLYCERINE

DOUGLAS
CROWN
A thin boiling starch made especially for the textile trade.
Produced in the most modern and perfectly controlled plant in existence.
The result of over 20 years study and experience in the production of textile starch and its uses.
Combines quality, uniformity and economy.
We manufacture Pearl, Powdered and other standard grade starches of the highest quality.

PENICK & FORD, LTD., INC.
*Manufacturers*
Cedar Rapids, Iowa

Southern Representatives:
G. L. Morrison
Greenville, S. C.
J. H. Almand, Atlanta, Ga.
P. G. Wear, Dallas, Texas

N. E. Representatives:
Marble Nye Company
Boston and Worcester, Mass.

STARCH

BLACKMER
ROTARY PUMPS

*Blackmer Rotary Pump with face plate removed showing interior construction.*

Slasher and Dye House Pumps
Built for Their Job

Blackmer Rotary Pumps are satisfactorily serving the textile industry as slasher and dye house pumps, because they are built for their job.

They may range in capacity from 5 to 500 GPM. and may be either solid iron or solid bronze with iron or bronze replaceable lining. All pumps handling sizing compounds may be equipped with "monel metal" shafting.

Every Blackmer Rotary Pump incorporates in its design the Blackmer Principle of automatic take-up-for-wear. This principle of pumping adjustment assures you a long life of pumping efficiency at a minimum operating cost.

The BLACKMER Principle

Four bronze buckets, set in recesses in a revolving rotor, ride lightly against the outer cylinder wall, held there by centrifugal force. As wear occurs, this same force automatically takes it up.

Let our engineers help you
solve your pumping problems

BLACKMER ROTARY PUMP Co.
*Petoskey, Mich.*
*Branches in nineteen principal cities*

SIZOL
TRADE-MARK

The more the Textile Industry learns about Sizol Service the better it appreciates its value in successful weaving.

SEYDEL CHEMICAL COMPANY
Jersey City, N. J.

S. P. Rakestraw
La Grange Georgia

W. W. Greer
733 Augusta Street
Greenville, S. C.

Meeting the Demand

Much is demanded from dye-house equipment. The destructive action of live steam, acids and alkalis must be successfully withstood or efficiency and profits disappear like mist before the sun.

For ten, twenty, thirty and more years Klauder-Weldon machines have functioned efficiently and produced profits under the most exacting conditions.

*Write for Illustrated Literature*

KLAUDER-WELDON DYEING MACHINE CO.
*Originators • Pioneers • Leaders*
BETHAYRES • PENNSYLVANIA

week, and this generally covers electricity and water. Coal, a smaller item in the Southern than in the New England budget, is sold to most mill help at cost to the mill, or about $3.50 per ton in large mills near the mines, and possibly twice that in the smallest ones far from mines. Winter clothes are cheaper in Southern mills, and in most of the villages the people save on grocery bills by growing vegetables. A few years ago the American Cotton Manufacturers' Association made a comprehensive study which found that the perequisites of Southern mill villages add the equivalent of $4.36 to the weekly wage of each worker. Where there are three or four workers in a family, as is often the case, this mounts up.

Roughly, 60 per cent of all New England cotton mill help is in Massachusetts. It is estimated that about 10 per cent of those in Massachusetts live in corporation houses, and the rent will average about 50 cents per room per week, while outside the corporation houses it will average about twice this. In the other New England States a much larger proportion of mill help lives in the corporation houses. Approximately the same rental rate prevails. Possibly a quarter of all New England mill help pays twice the rent that 75 per cent or 80 per cent of the Southern help pays, while the other three-quarters pays four times as much. I have been unable to find any dependable studies of the relative cost of living in Southern mill villages and New England mill communities. but there is no question on the whole that in the South it is much lower. Several mill executives who have operated mills in both sections tell me emphatically that the Southern mill help can buy more with their wage than New England help can. This is exactly the opposite of the belief generally held in New England. At any rate, it is certain that the real income of the Southern worker is very much nearer that of the New England worker than is indicated by a comparison of cash wages for an hour's work or a year's work.

### Workers Busy and Contented.

A third important factor is what a mill man calls "good runnin' work." Throughout the South men locally famous for their understanding of the mill help's point of view, and for their success in keeping their people satisfied and their labor turnover small, told me the three chief factors in keeping help satisfied, in the order of their importance, are "good runnin' work," good living conditions, and, third in importance, wages; for it seems that the farming class that has made up the mill population has not yet adopted the modern commercial point of view as to the supreme importance of cash value. They want, above all else, satisfaction in their work; next, satisfactory home conditions.

### Southern Mills More Modern.

When I was in New England last winter mill architects, textile machinery manufacturers and the editor of an authoritative textile journal all told me that the mills of the South as a whole are more modern in construction and much more modern in equipment, and, in the matter of maintenance, much better managed. One man, a New Englander by birth and breeding, with a fondness for picturesque terms but an encyclopaedic knowledge of the industry of both sections, described a large portion of the New England mills as "filled with rotten old machinery tied together with strings." I don't believe he intended that expression to be taken literally, however. The editor said to me: "A president of a New England mill told me had nearly a million dollars cash surplus lying in the bank. 'Isn't that fine?' the old fossil said. I told him if he was running a bank it would be fine, but as long as he was running a cotton mill and his earnings came out of machinery I thought the best thing for him to do would be to scrap the ancient junk he had in his mill and put his idle cash surplus to work for him in the shape of modern machinery.

"We've got too many old fossils in the industry up here," he added. "Too many of our mills are run as family affairs regardless of the merit or ability of the sons and grandsons, nephews and cousins, who get control of them. They won't put in new machinery. They are afraid to spend money in the face of Southern competition, and that fear is what is ruining lots of them. The Southern mills were built when these mills were already old, those fellows down there aren't handicapped with all the traditions we have up here, and they go ahead in a business-like, aggressive way and keep their mills modern and well equipped."

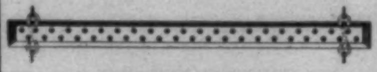
### Why the Help is Happy.

This may seem a digression from a discussion of labor conditions, but it has a vital bearing on the spirit and the satisfaction of the men and women who operate the machinery. In a mill that is kept up to date, with the best of machinery properly maintained, the help has what it calls "good runnin' work." In other words, the work flows smoothly along, with a minimum of vexatious delays over faulty machinery, breakdowns, delays between departments, etc. Piece-rate workers are kept busy. The people leave the mill in the evening at peace with the mill and the world. They have less to grumble about. It is not a question of the help drawing the contrast between the New England and the Southern mills, because they know next to nothing about the New England mills. It is simply a question of human nature, which is pretty constant everywhere, reacting differently under different circumstances. In one section there are fewer vexations, and, to that extent, there is less dissatisfaction.

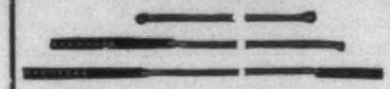
I know a good many men will discount the force of this factor. It is indefinable, and cannot be expressed in mathematical terms. It cannot be measured at all. Nevertheless, where the best available authorities on the psychology of the mill help set "good runnin' work" at the head of the list of factors in keeping their

PATENTS
Trade Marks and Copyrights
Difficult and rejected cases specially solicited. No misleading inducements made to secure business. Over thirty years active practice. Experienced, personal, conscientious service.
Write for terms. Address
SIGGERS & SIGGERS
Patent Lawyers
Suite 34 N. U. Washington, D. C.

Improved Dobby Chain



Dobby Cords



Rice Dobby Chain Co.
Millbury, Mass.
Send Us Your Order Today

WELL DRILLING AND DEEP WELL PUMPS
We do the engineering, and have had 32 years experience solving water problems satisfactorily for textile mills.
SYDNOR PUMP & WELL CO., Inc.
Richmond, Va.

GREENSBORO
Loom Reeds
Greensboro Reed Co.
Greensboro, N. C.
GREENSBORO

Becky Ann's Books
Interesting Stories of
Cotton Mill Life
"The Better Way"
"Hearts of Gold"
Price $1.00 Each
Order from
CLARK PUBLISHING CO.
Charlotte, N. C.

help satisfied, it must be given weight.

A fourth factor, and one that I am inclined to attach considerable weight to, though I found a difference of opinion on this score, is the prevalence among the mill help, and the diligent cultivation thereof by the executives, of what I call the American idea of getting ahead, instead of the European idea which the mills of New England unavoidably imported along with their foreign workers.

### American Vs. Foreign Labor

Drilled into the minds of the lower classes of Europe, and imparted by them to their growing children, is a deep conviction of the insurmountability of the barrier that separates them from the upper classes. To be sure, in this country they throw off that idea to some extent as they associate with native Americans. But there are thousands of them who seldom or never come into contact with native Americans, but stay in their foreign colonies and associate almost altogether with people of their own race. The idea furnishes a fertile soil for the socialistic conceptions and for the suspicions implanted and vigorously cultivated by the professional labor agitators. A few rare and brilliant conceptions to this rule, men of foreign birth who have risen by great force and ability to positions of leadership, do not disprove the general applicability of this rule. The European class idea is a heavy handicap to individual progress.

The Southern mill help is almost wholly native American; almost 100 per cent. American-born, of American-born parents. They come originally almost wholly from the farms, and whether they be tenant farmers, as most of them were, or owners, as a good many of those in North Carolina were, they have the American idea of progress by individual effort. As a class they are not very ambitious. What can be expected of them? Except in North Carolina, where most of them come from the mountains, the great majority have come from the tenant farmer class—the poorest, least thrifty, least energetic,- least capable and ambitious of the farming class as a whole. And most of them have come to the mills because they had failed at farming and had nowhere else to turn. They are the dregs of the farmer population. In justice to many conspicuous exceptions to this sweeping generalization I want to say here that this point will be discussed more fully in a later article, and the strong strains running through some mill villages mentioned. However, this generalization fits pretty well over most of the mill population of Georgia, Alabama and South Carolina.

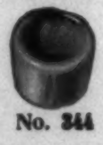
### The American Idea.

Ambition is rare, and the will to rise is rare. But where it exists, the natural thought seems to be to rise by individual effort rather than by organization and class effort. And to the everlasting credit of the mills be it said that most of them are doing all in their power to cultivate this feeling. Many of them are teaching their girls and young men that some day they may want to do something better than work in a cot-

It Pays To Use
"Akron" Belting!
For 40 years "AKRON" has meant a standard of quality in Leather Belting unequaled for economy in operation, and a house policy denoting a square deal to customers.
"AKRON" Belting means less cost per spindle per year than other belts.
A trial will demonstrate
Send Us Your Order!
The Akron Belting Company
Akron, Ohio U. S. A.

THE SUPERIOR PORCELAIN
for
Textile
Machinery

No. 654

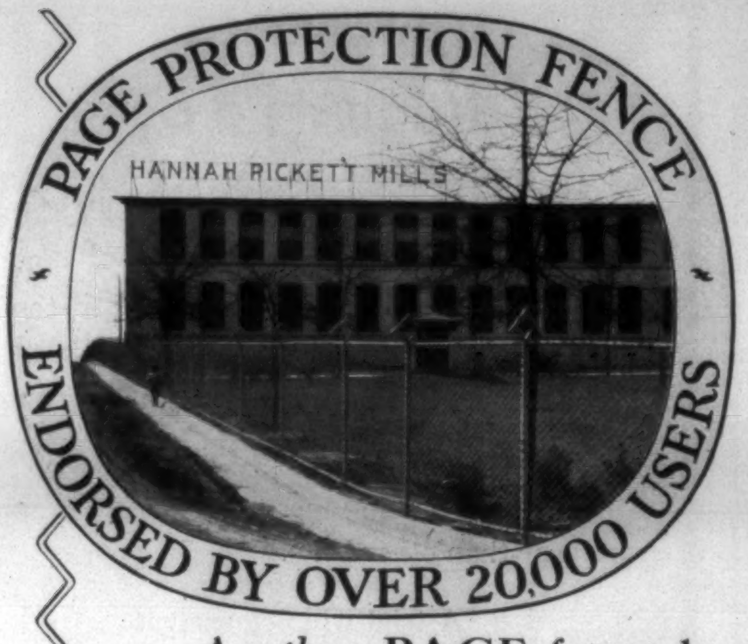


No. 344

No. E-4

manufactured by
Page-Madden Co.
Incorporated
128-34 Sumpter St.
Brooklyn, N. Y.
Samples and Catalog upon Request

Thomas W-S-D Grate Bars
"GIVING PERFECT SATISFACTION"
Mr. W. A. Reid, Supt-Manager, Consolidated Textile Corp., Pelham, Ga. writes;
"With reference to "W-S-D" Grate Bars that we have installed in three boilers; beg to advise that they are giving perfect satisfaction, and we are very highly pleased with them."
In a nut shell, what more could be desired?
There is a similar experience in store for you, whenever you give us the privilege of co-operating with you. Why not now? No obligation is incurred in obtaining full particulars.
THOMAS GRATE BAR CO., Birmingham, Ala.



Another PAGE-fenced
SOUTHERN MILL—

The Hannah Pickett Mills, Rockingham, N. C., chose Page Fence, specifyinv wire of ARMCO Ingot Iron (exclusive with PAGE). This rust-resistant wire-link, covered with the super-heavy galvanized coat, is the last word in durable protection.

Style 5-TR PAGE Fence, high overall was used—five barbed wire strands extending over either side of the fence making it practically unclimbable.

Why not have this lasting protection for your plant? We carry a complete stock of PAGE Fencing,—will erect your fence promptly, or furnish a foreman to direct your own workmen. Plans and estimates without obligation. Just phone, wire or write the address below.

GENERAL EQUIPMENT COMPANY
Charlotte, N. C.

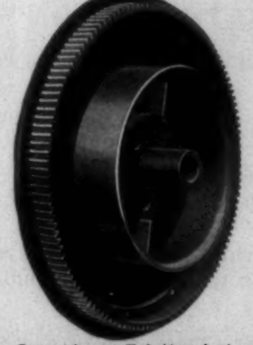
PAGE PROTECTION FENCE - - - - -

DIXON'S
SILICA— GRAPHITE PAINT

is a natural combination of silica and flake graphite. The vehicle is pure boiled linseed oil. It will not crack or peel off because of the natural elasticity of the flake graphite, while the silica furnishes the wear-resisting qualities.

Because of these qualities, Dixon's Paint affords better and longer protection. By making frequent repainting unnecessary, it lowers the cost of paint upkeep. Write for Booklet 176 B.

JOSEPH DIXON CRUCIBLE CO.
Jersey City, N. J. Established 1827



Mossberg Pressed Steel Corporation

All Steel

LOOM BEAM HEADS
SECTION BEAM HEADS
ADJUSTABLE BEAM HEADS (SPLIT AND SOLID)
NARROW FABRIC BEAMS
BEAMS FOR ELASTIC AND NON ELASTIC WEB
BEAMS FOR SILK RIBBON
"NEW PROCESS" DROP WIRES
JACK SPOOLS

Geared and Friction Let. Off Loom Beam Head
Patented June 1, 1920

Attleboro, Mass.

Southern Office, 101 Augusta Street, Greenville, S. C.

ton mill, and the only way they can do it is to go to school, study, and become as well educated as they can. In one way it seems the mills' salvation to keep out that European idea of class; but in another way it is sending out of the mills most of the bright and ambitious boys and girls who might otherwise be kept in the mills for lack of the education they- are being urged to acquire. But that is a little irrelevant here, and will be discussed more fully later on. The point is that the American idea of individual improvement and individual effort is innate in the Southern mill people, and is being developed to the limit of the people's ambition by the mills.

Some mills carry this idea to the last extreme, both in the schools and in the mill work, where all second men and overseers, and if possible even the superintendent, are drawn from the ranks. Others do not carry it so far. Of course many of the smaller mills pay no attention to this sort of thing, chiefly because they are too small to support welfare work, schools or other educational facilities.

### Industrial Development and Labor Demand.

The fifth factor is one of the strongest in the situation. It may be the strongest. To many New England executives it appears the only factor, because it is the most conspicuous from a distance. It is far this reason that I have left it for the last, because I want to make very clear that there are other potent factors involved.

It is the great difference in the relative density of industrial development of Massachusetts and Rhode Island, the two chief cotton textile states of New England, and of the Southern cotton mill States, is so great that it is hard for Southerners who have never traveled in New England to realize. And the relative sparsity of industry, and especially the comparatively vast areas of the South, I believe, are generally overlooked by New England mill men in their conjectures on the leveling up tendency of wages and other factors in their competition. South Carolina is much the smallest of the 14 Southern cotton mill states except Maryland, and Maryland is losing spindles almost as fast as the other States are gaining. South Carolina alone in area would cover all of the cotton mill section of New England except possibly a few scattered mills in Maine, and lap far over in most directions. In Massachusetts and Rhode Island the capital investment in industrial plants is $371,460 for every square mile of area, and the number of their wage earners per square mile is 90. In the four principal cotton textile States of the South, Alabama, Georgia and the Carolinas, the capital investment in industry is $10,000 per square mile, and the number of wage earners is 2.4. In other words, in terms of the dollars invested and wage-earners employed per square mile of area, the industrial development of Massachusetts and Rhode Island is thirty-five times as great as it is in the chief cotton mill States of the South. While the other New England States are not so highly developed as these two, neither are the other Southern States so highly developed as the four mentioned. In the South there are no other great industries bidding for the mill help, and if the people leave the mills they have nowhere else to go. When the mill help of New England go on strike they simply walk round the corner or get on a trolley and ride a mile or two, and get jobs in other industries. If they are'nt all trained to work in other industries, at least enough of them are able to get jobs in other lines of industry to keep most of their families fed, clothed and sheltered. And the unions, old and with their war chests full, are able to give unemployment doles to those who need them. The employers are thus pretty nearly forced to accept any terms the unions propose, however unreasonable they may be.

### No Place For Labor Agitations

Seven or eight years ago some Northern labor agitators arrived in Columbus, Georgia, stirred up the latent dissatisfaction of the people, promised many things impossible of fulfilment even had they won their strike, and called the people out. The mills simply closed down and refused to meet the strikers' terms. The strikers' money ran out, the strike was called off, and the people went back to work. Recently an agitator arrived in Columbus to repeat the experiment. The mill help, indignant over broken promises, chased him out of town. This is typical.

In short, the Southern mill workers cannot go on strike if they would, and they have not great desire to strike anyway. The conditions under which they live are so much better than anything they have ever known before, and most of them are still so close to those old conditions, they do not have any great feeling of dissatisfaction. They are well-off in the mills, and they know it. And this brings us to the subject of the second article, which is the living conditions provided by mills in the South.

(Continued Next Week)

---

## Safety Where the Shuttle Flies

(Continued from Page 8)

members, depending on the sie of the department. There are five workmen's committees of from 15 to 20 members each. These members serve six months and upon being retired they retain. Meetings are held twice a month at which accidents and other safety topics of interest are discussed. There are now 500 safety propagandists in that plant in the persons of all past and present committee members—and the number increases every six months. Monthly meetings of overseers, divided into four committees, are also held.

The number of days lost per employee per year at the Arlington Mills during the three years since this organization has been in effect has decreased 80 per cent. compared to the three years' experience before the plant was organized. Both the frequency and severity accident rates show a remarkable decrease.

During the past year, a similar

system has been functioning in the Sanford Mills of the American Cotton Fabric Corporation at Fall River, Mass. The accident severity has fallen 57 per cent. during the same period and the compensation days reduced 68 per cent., according to information supplied by Everett F. King of H. A. Hale, Jr. & Co., Boston, Mass.

The mill of moderate size finds the more simple organization effective. In the Palmer Mill, at Three Rivers, Mass., two committees are organized. One is made up of five members from the rank and file of workers, three men and two women. This committee makes an inspection on company time once a month. Its finds are reported at a meeting to Agent F. A. Upham. Recommendations of merit are referred to a committee on repairs, consisting of the superintendent, the head of the mechanical departmeent and the mill inspector. Numbers are given to recommendations and as fast as they are compiled with, reports are made to the insurance company.

The health and safety committee in each division of the Pacific Mills plant Lawrence is one of the two important committees operating under a Shop Council franchise. This committee, composed of three representatives and three management representatives, attends to all matters of health, safety, recreation and education.

Placing the right man on the job is another approach to the accident problem utilized by many companies. In the past, the overseer—the foreman of the textile mill—hired his own help and many employees were selected without regard to their suitability for the work. But now with a different class of labor, the intelligent and proper selection of mill hands is made by plant employment offices.

In Massachusetts, employers may obtain reductions in their insurance premiums below the basic rates established by the states when their accidents experience is consistently below the average for the industry. The five-year record of one textile plant, according to information supplied by a Massachusetts insurance company, shows a total of $17,604 saved in cash premiums, an average of approximately $3,500 a year.

## Standard Tests for Fast Colors

(Continued from Page 10)

sources will be necessary and it is hoped that when the textile manufacturing, distributing and consuming interests become thoroughly acquainted with the endeavor we are making to assist them, that the necessary support will be forthcoming.

The whole situation of the American Association of Textile Chemists and Colorists at the present time, we believe, resolves itself into this.

We have a research committee consisting of a group of men that it would be difficult to duplicate at any cost, but they are extremely busy men and have not the time to carry on the necessary experimental work for the accomplishment of the most effective work and prompt results. While the members of this committee are willing to contribute their best endeavors toward the supervision of this work, they feel that the necessary experimental work should be supported by the textile industry. No special effort whatever has been made to secure such support, but we have gone ahead with the belief that as soon as our work should have attracted sufficient attention and merited the support of the textile industry and allied interests, that such financial support would be forthcoming.—Louis A. Olney in Daily News Record.

## Southern Spinners' Bulletin

The weekly bulletin of the Southern Yarn Spinners Association says:

Market conditions have been quiet for the past week. Trading spotty and buyers indifferent toward making future commitments. Spinners prices remain firm although occasional sales have been reported at less than prevailing market prices.

In spite of the weakness of the cotton market, spinners prices have held reasonably firm, although buyers have been endeavoring to make yarn show a commensurate reduction to the cotton values.

The drought situation in the Piedmont section has been slightly relieved by recent local rains. The Southern Power Company have now rearranged their schedule and require only two days per week curtailment instead of two and one half as formerly. They hope to be able to maintain this schedule until after the first of the year. This additional one half day operating time will not have any effect on the yarn mills. Spinners are already sold for all of their production until the first of the year, consequently are not in position to accept further commitments.

Sales have been reported at less than market quotations without specifying the character of the yarn covered. Investigation shows that these sales are on tinged and dark stock yarns and should not be confused with prices quoted for first class white stock.

### German Foreign Trade in Silk Increases.

Imports of silk and silk textiles into Germany during the first six months of the current year show an increase of 56 per cent in volume and 34 per cent in value, as compared with the corresponding period of 1924, while exports likewise show an increase of 55 per cent in volume and 59 per cent in value, Consul C. T. Steger advises the Department of Commerce from Dresden. About one-half of these imports consist of raw silfl chiefly in the undyed state, and come principally from Italy. Exports of rayon more than doubled and are almost entirely in the coarser counts. The principal markets for these yarns are Great Britain, Switzerland, the United States and Czechoslovakia. Exports of velvet and plush and silk gloves showed almost a 200 per cent increase in the 1925 period over the first half of 1924.

Starch

EAGLE

★ ★ ★
★ ★
★
★ ★ ★ ★

*and these Stars have a meaning*

—They signify the different grades in which Thin Boiling Eagle Starch is offered to the Textile Industry.

Being the pioneers in the manufacture of Thin Boiling Starches, we are gratified at the widespread recognition they have received.

Be sure to select the grade best suited to your work. Our knowledge and experience are at your service.

CORN PRODUCTS REFINING CO.
New York

Starch

(Established 1848)

JAMES H. BILLINGTON
COMPANY

Manufacturers of

*Textile Mill Supplies*

Proprietors of

The Philadelphia Bobbin Company
The Philadelphia Shuttle Company
The "Danforth" Leather Belting Co.
The Keystone Rawhide Picker Works

BUY FROM THE MANUFACTURER DIRECT

113 Chestnut St. Philadelphia, Pa.

**SELLING AGENTS for SOUTHERN COTTON GOODS**

**Deering, Milliken & Co., Inc.**
79-83 Leonard Street
New York
99 Chauncy St., Boston 223 Jackson Blvd., Chicago

**Leslie, Evans & Company**
64 Leonard Street New York
Selling Agents for Southern Mills
Sheetings, Print Cloth, Drills, Twills, Ducks

**W. H. LANGLEY & CO.**
COMMISSION MERCHANTS
57 Worth St. New York
Sole Selling Agents For
Langley Mills, Seminole Mills, Aiken Mills, Anderson Cotton Mills, Strickland Cotton Mills, Moultrie Cotton Mills, Poulan Cotton Mills Royal Cotton Mills

**WOODWARD, BALDWIN & CO.**
Established 1828
43 and 45 Worth Street, New York
Selling Agents for
Southern Cotton Mills
Baltimore Philadelphia Boston St. Joseph
St. Louis San Francisco Chicago Shanghai (China)
St. Paul Cincinnati Minneapolis

**Wellington, Sears & Company**
93 Franklin St., Boston 66 Worth St., New York
Philadelphia Chicago St. Louis Dallas
Atlanta New Orleans San Francisco

**Amory, Browne & Co.**
Specializing in Selling Cotton Mill Products
BOSTON, 48 Franklin St. 62 Worth St., NEW YORK
*Our Export Department Serves 69 Foreign Countries*

**CURRAN & BARRY**
320 Broadway
New York, N. Y.

**REEVES BROTHERS, Inc.**
55 Leonard Street New York
Print Cloths, Twills, Pajama Checks,
Sheetings, Combed Peeler Yarns

# Cotton Goods

New York.—The cotton goods markets showed considerable improvement during the week. Prices steadied after the decline in cotton was followed by a rise in the market. Most of the business was done of a filling-in character, as mills were not willing to sell far ahead at present prices and buyers would not bid higher. On the finished lines, prices have held fairly steady, the volume of unfilled orders giving strength to the market for spring business.

Markets reports showed that percales and printed specialties have sold through to the end of the year. Bleached goods were quiet. The leading lines of sheets and pillow cases are sold ahead to the end of the year and little new business was reported. Rayon mixtures continued to sell well.

Cloth markets were stronger and moderately active, with print cloths now bringing ¼c a yard higher than the low points on some of the wide staples. Fir 38½-inch 64x60s 9¼c was paid for spots, 9⅛c for November, and 9c bid and declined for December. For January deliveries 8⅞c was accepted. Trade for the day ran well over 50,000 pieces in print cloths. Scattered lots of convertibles and shirtings were sold for nearby and future delivery.

A substantial quantity of 100x60s carded broadcloth was reported taken for January forward delivery at 13¾c. The market for the 100x64s has held at 14c and the 112x60s at 15¼c. Further reports on the English 144x70s single business was 27¾ for sakal Egyptians and 55c and 55½c for the 100s two-ply both way 144x76s.

There was some sizeable business in pajama checks for the first quarter of next year, last week. The bulk of the trade started at one-quarter, followed by business at three-eights, and then at 10½ cents. On Saturday, it was reported that 10⅝ had been paid for fair quantity for January, and three-quarters asked for nearby. February-March at one-half had been reported. The 64x60s had sold for next year at 8½ cents, and some spot had brought 9 cents during the latter part of the week.

Trade indications for the future are regarded as very encouraging. There must first be the satisfaction that cotton has been stabilized and that the goods market has discounted everything. The buying that is expected to be done for the first quarter of next year is expected to be great, inasmuch as very few people are committed for their requirements for that period. The same holds true with jobbers as well as with converters. Men who have been on the road report that jobbers have practically no commitments for staple goods for the early part of next year and believe that if markets settle, much business must follow.

The fluctuation of the cotton market, together with the Government cotton report, due Monday, were rather depressing on the Fall River print cloth market for the week, with the result that sales are restricted to 35,000 pieces. Buyers are apparently interested in both matters ,as trading has been restricted to small lots of 36-inch, low counts, orders being mostly of the filling-in type.

Mills have held quite firm on many prices, although some show a slight decline from the previous week. Interest in sateens has been in keeping with the general interest in other styles, and the character of the trading during the week can best be described as hand to mouth business.

Cotton goods prices were quoted as follows:

| | |
|---|---|
| Print cloths, 28-in., 64x64s | 6⅞ |
| Print cloths, 28-in., 64x60s | 6⅝ |
| Print cloths, 27-in., 64x60s | 6⅜ |
| Gray gd's., 38½-in., 64x64s. | 9⅞ |
| Gray goods, 39-in., 68x72s.. | 10½ |
| Gray goods, 39-in., 80x80s.. | 12¼ |
| Brown sheetings, 3-yard... | 13 |
| Brown sheetings, 4-yard... | 11¼ |
| Brown sheetings, stand..... | 14 |
| Ticking, 8-ounce .......... | 24 |
| Denims .................. | 19 |
| Staple ginghams, 27-in..... | 11½ |
| Kid finished cambrics .... | 9½a10½ |
| Dress ginghams .......... | 13½a17½ |
| Standard prints .......... | 9¼ |

## United States Shipments of Cotton Manufacturers to Its Non-contiguous Territories.

United States shipments of cotton cloth to its non-contiguous territories during September, 1925, totalled 5,413,066 square yards valued at $959,115, a marked improvement over the August shipments which amounted to 2,145,660 square yards worth $401,920, according to the Textile Division of the Department of Commerce. Comparative figures for September, 1924, are 3,772,924 square yards and $676,650. Shipments of cotton hosiery and other knit goods showed a decrease in September from the August figure in the case of Alaska and Hawaii but an increase was evident in the goods sent Porto Rico.

Southeastern Selling Agency
**LESSER-GOLDMAN COTTON COMPANY**
OF ST. LOUIS, MO.
P. H. PARTRIDGE, Agent, Charlotte, N. C.
Extra staples, and good 1 1-16 and 1⅛ cotton from Arkansas, Oklahoma, and Texas, and Memphis territory.

# The Yarn Market

Philadelphia, Pa.—Business in the yarn market continued slow during the week. Prices held well, especially for spot yarns and the stronger cotton market added firmness to yarn quotations. Spinners are in a position to keep prices up especially where yarns for anything like nearby delivery. Curtailment in the South continued on a two-day a week basis. There was a moderate amount of business done during the week, but nothing like as much as should be passing at this season. Prices showed considerable irregularity. For spot and nearby deliveries, prices paid depended entirely on how soon yarns were wanted.

Combed yarns continued firm with the mills well sold for the rest of the year. Some of the plants are reported sold through February, while others are willing to take business with deliveries beginning in January. Many of the mills making carded yarns are also sold up until January.

Carded knitted yarns sold fairly well. Underwear manufacturers were in the market but only to cover their immediate needs. The weaving trades were inactive and placed only a smal amount of business. Toward the end of the week the market was disposed to await the Government report due Monday and there was little interest either from buyers or sellres.

Mrecerized yarns continued very strong and prices were somewhat higher. The largest producers of single and ply mrecerized yarns reported that they had no yarns to offer for anything like prompt shipment.

Prices were published as follows, but under market conditions prevailing now, were regarded as purely nominal:

### Southern Two-Ply Chain Warps.

| | | |
|---|---|---|
| 8s | 35 | a-- |
| 10s | 36 | a-- |
| 12s | 37 | a-- |
| 16s | 39 | a-- |
| 20s | 40 | a40½ |
| 24s | 43 | a44 |
| 26s | 44 | a45 |
| 30s | 45½ | a46 |
| 40s | 56 | a57 |
| 50s | 66 | a67 |

### Southern Two-Ply Skeins.

| | | |
|---|---|---|
| 8s | 35 | a-- |
| 10s | 36 | a-- |
| 12s | 37 | a-- |
| 14s | 38 | a-- |
| 16s | 39 | a-- |
| 20s | 40 | a-- |
| 24s | 43 | a-- |
| 26s | 44 | a-- |
| 30s | 45 | a45½ |
| 36s | 53 | a-- |
| 40s | 55 | a56 |
| 40s ex. | 57 | a58 |
| 50s | 65 | a66 |
| 60s | 72 | a-- |
| Tinged Carpet, 3 and 4-ply | 34 | a-- |
| White Carpet, 3 and 4-ply | 35 | a-- |

### Part Waste Insulated Yarn

| | | |
|---|---|---|
| 6s, 1-ply | 31½ | a-- |
| 8s, 2, 3 and 4-ply | 32½ | a33 |
| 10s, 1-ply and 3-ply | 34 | a-- |
| 12s, 2-ply | 35 | a-- |
| 16s, 2-ply | 36½ | a37 |
| 20s, 2-ply | 39 | a-- |
| 26s, 2-ply | 43 | a-- |
| 30s, 2-ply | 44 | a44½ |

### Southern Single Chain Warps

| | | |
|---|---|---|
| 10s | 36 | a-- |
| 12s | 37 | a-- |
| 14s | 38 | a-- |
| 16s | 39 | a-- |
| 20s | 40 | a-- |
| 24s | 42 | a-- |
| 26s | 43 | a-- |
| 30s | 44 | a45 |
| 40s | 55 | a-- |

### Southern Single Skeins.

| | | |
|---|---|---|
| 6s | 35 | a-- |
| 8s | 35½ | a-- |
| 10s | 36 | a-- |
| 12s | 37 | a-- |
| 14s | 37½ | a-- |
| 16s | 38½ | a-- |
| 20s | 39 | a-- |
| 22s | 40 | a41 |
| 24s | 42 | a-- |
| 26s | 42 | a43 |
| 30s | 44 | a45 |

### Southern Frame Cones

| | | |
|---|---|---|
| 8s | 34½ | a-- |
| 10s | 35 | a-- |
| 12s | 35½ | a-- |
| 14s | 36 | a-- |
| 16s | 36½ | a-- |
| 18s | 37½ | a-- |
| 20s | 38½ | a-- |
| 22s | 39 | a-- |
| 24s | 40½ | a41 |
| 26s | 41½ | a42 |
| 28s | 42½ | a43 |
| 30s* | 41½ | a42 |
| 30s | 45 | a46 |
| 40s | 53 | a54 |

*Tying in.

### Southern Combed Peeler Skeins, Etc.—Two-Ply.

| | | |
|---|---|---|
| 16s | 56 | a60 |
| 20s | 58 | a62 |
| 30s | 65 | a67 |
| 36s | 75 | a80 |
| 40s | 80 | a85 |
| 50s | 87½ | a90 |
| 60s | 90 | a95 |
| 70s | 1 05 | a1 10 |
| 80s | 1 18 | a1 20 |

### Southern Combed Peeler Cones.

| | | |
|---|---|---|
| 10s | 48 | a49 |
| 12s | 49 | a50 |
| 14s | 49½ | a50½ |
| 16s | 52½ | a-- |
| 18s | 51 | a52 |
| 20s | 52 | a-- |
| 22s | 53 | a-- |
| 24s | 56 | a-- |
| 26s | 56½ | a-- |
| 28s | 57 | a-- |
| 30s | 60 | a-- |
| 32s | 62 | a-- |
| 34s | 65 | a-- |
| 36s | 72 | a-- |
| 38s | 74 | a-- |
| 40s | 75 | a-- |
| 50s | 80 | a-- |
| 60s | 90 | a95 |
| 70s | 1 05 | a-- |
| 80s | 1 15 | a-- |

### Eastern Carded Peeler Thread—Twist Skeins—Two-Ply.

| | | |
|---|---|---|
| 20s | 50 | a-- |
| 22s | 51 | a-- |
| 24s | 56 | a-- |
| 30s | 59 | a-- |
| 36s | 63 | a-- |
| 40s | 65 | a-- |
| 45s | 70 | a-- |
| 50s | 75 | a-- |

### Eastern Carded Cones.

| | | |
|---|---|---|
| 10s | 41 | a-- |
| 12s | 42 | a-- |
| 14s | 43 | a-- |
| 20s | 44 | a-- |
| 22s | 47 | a-- |
| 26s | 51 | a-- |
| 28s | 53 | a-- |
| 30s | 55 | a-- |

DYEING and BLEACHING of RAYON
DYEING, BLEACHING and WINDING of COTTON YARNS in skeins
QUALITY WORK
Southern Artsilk Bleach & Dye Works, Inc.
Burlington, N. C.

CATLIN & COMPANY
NEW YORK BOSTON PHILADELPHIA CHICAGO
Commission Merchants
Cotton Cloth and Cotton Yarn
SOUTHERN OFFICE
910-11 Commercial Bank Bldg. CHARLOTTE, N. C.

WENTWORTH
Double Duty Travelers
Last Longer, Make Stronger Yarn Run Clear, Preserve the SPINNING RING. The greatest improvement entering the spinning room since the advent of the HIGH SPEED SPINDLE
Manufactured only by the
National Ring Traveler Co.
Providence, R. I.
31 W. First Street, Charlotte, N. C.
NATIONAL RING TRAVELER CO. PROV. R. I. U.S.A.
U.S. STANDARD

RIDLEY WATTS & Co.
COMMISSION MERCHANTS
44-46 Leonard Street NEW YORK CITY
Branch Offices
Chicago Philadelphia Boston
St. Louis Baltimore

MERROWING
Established 1838
FOR
Stocking Welting Maximum Production
Toe Closing Minimum Cost of Upkeep
Mock Seaming Unexcelled Quality of Work
THE MERROW MACHINE COMPANY
20 Laurel Street, Hartford, Conn

Morland Size, Inc.
*"The Warps Best Friend"*
Moreland Sizing Company
Established 1908
Office: 206 Andrews Low Bldg.
Spartanburg, S. C.
S. C. THOMAS & J. T. MORELAND, Owners

DARY TRAVELERS
If it's a DARY Ring Traveler, you can depend on it that the high quality is guaranteed—that the weight and circle is always correct, and that all are uniformly tempered which insures even running, spinning or twisting.
Ask for prices
DARY RING TRAVELER COMPANY
311 Somerset Ave. Fred H. Dary, Mgr. Taunton, Mass.
JOHN E. HUMPHRIES —Sou. Agents— CHAS. L. ASHLEY
Greenville, S. C. Atlanta, Ga.

# Want Department

**Help Wanted**

Overseer carding for small card room. Must furnish reference showing you have worked up from the bottom, are a first-class grinder and absolutely sober. Give references. Address "Confidential," care Southern Textile Bulletin.

*Save in freight by using*

**W I L T S**

Veneer Packing Cases

They are lighter and stronger, made of perfect 3-ply Veneer Packing Case Shooks. A saving of 20 to 80 pounds in freight on every shipment because of extreme lightness. Stronger than inch boards, burglarproof, waterproof and clean. Write for prices and samples. Convincing prices—Quick service.

**Wilts Veneer Co., Richmond, Va.**

**Joseph L. Davidson Co.**

**Established 1889**

*Designing Card Stamping Repeating*

FOR ALL TEXTILE FABRICS

*2525 N. Second St., Philadelphia, Pa.*

**MAKE YOUR WANTS KNOWN**

Through The

**Bulletin Want Department**

Read in More than 95% of the

Southern Textile Mills

Rate: $1.50 per inch per insertion

**Salesmen Wanted**

Two salesmen, one to cover North Carolina and the other Georgia, now calling on cotton mills, to handle our Leather Belting, Loop Pickers, Strapping, etc., with their other lines on commission basis. Greenville Belting Co., Greenville, S. C.

**Wanted**

Two good loom fixers on E & P Model Draper looms, making light Duck and Osnaburgs. Good pay and healthy place to live. Must be strictly sober and real loom fixers. Apply to D. D. Golden, Overseer of Weaving, Monticello, Ark.

**"ATLANTA"**

**HARNESS**

*"Quality and Service*

*That Satisfies"*

**ATLANTA HARNESS**

**& REED MFG. CO.**

**ATLANTA, GA.**

**P. O. Box 1375**

**Telephone Main 0517**

**To Mill Managers and Owners**

Do you need a thoroughly competent Superintendent or Assistant Superintendent? A Textile Graduate, married, with 15 years of hard practical experience? One who can furnish unquestionable references and can show results? Address "Competent," care Southern Textile Bulletin.

**SALESMAN WANTED**

Want Salesman with fair idea of dyestuffs, sizing, softeners and finishing material. A good man with a good following can get good pay. Apply to Box 483, Charlotte, N. C.

**WANTED**

To Sell—?
To Buy—?
To Exchange—?
Employment—?
Help—?

**"Want Ads" in the SOUTHERN TEXTILE BULLETIN Get**

**RESULTS**

**Rates: $1.50 per inch per insertion**

**Ring Traveler Specialists**

**U. S. Ring Traveler Co.**

**159 Aborn Street, PROVIDENCE, R. I.**

**ANTONIO SPENCER, President** **AMOS M. BOWEN, Treasurer**

**WM. F. VAUGHAN, Southern Representative**

**P. O. Box 792** **GREENVILLE, S. C.**

U. S. Ring Travelers are **uniformly tempered** which insures even-running spinning. They are also correct as to **weight** and **circles**. Quality guaranteed.

**UNIVERSAL WINDING CO.**

**BOSTON**

*Textile Winding Machinery*

**Southern Office**

**1011 Johnston Building**

**Charlotte, N. C.**

**Frederick Jackson,**
**Southern Agent**

**Factory Office**
**Providence, R. I.**

**Broadway Central Hotel**

**667-677 Broadway, New York**

Accommodations for 1000 guests.
In the heart of the down-town business section.
Connections to all parts of the City within a few minutes from our door.

**Newly Furnished and Renovated**

High class service at low rates.
Large Banquet and Convention Halls.

**Arrange for Your Conventions At Our Hotel**

**NORWOOD**

**Mechanical Filtration**

**Gravity or Pressure Types**

*Clean, Clear Water Guaranteed*

**Norwood Engineering Co.**

**Florence, Mass., U. S. A.**

*Chas. M. Setzer, Sou. Rep., Charlotte, N. C.*

# EMPLOYMENT BUREAU

The fee for joining our employment bureau for three months is $2.00, which will also cover the cost of carrying a small advertisement for two weeks.

If the applicant is a subscriber to the Southern Textile Bulletin and his subscription is paid up to the date of his joining the employment bureau the above fee is only $1.00.

During the three months' membership we send the applicant notices of all vacancies in the position which he desires and carry small advertisement for two weeks.

We do not guarantee to place every man who joins our employment bureau, but we do give them the best service of any employment bureau connected with the Southern Textile Industry.

WANT position as carder, spinner, also experienced in spooling, winding twisting and warping. I. C. S. graduate. Age 35, can, come on short notice. No. 4682.

WANT position as carder or spinner. Have been overseer in both departments and also experienced as assistant superintendent . Best of references. No. 4683.

WANT position as superintendent of small mill or assistant in larger mill Now employed as carder in large plant. Good references. No. 4684.

WANT position as manager or secretary of 5,000 to 10,000 spindle mill Prefer Alabama, or state west of Alabama. Am well qualified and can give excellent references. No. 4687

WANT postion as second hand in carding in large room Have had 20 years experience Married, age 32 sober, musician. Prefer South Carolina. Good worker, know colored and plain work. No. 4688.

WANT position as overseer spinning or carding and spinning. Experienced man who can deliver the goods. Good references as to character and ability. No. 4689

WANT position as overseer weaving, the Carolinas or Georgia. Now employed, but wish to change. Experienced on plain and fancy goods. Excellent references. No. 4690.

WANT position as overseer cloth room. Sixteen years experience Now employed as overseer. Have family. Good references. No... 4691.

WANT position as overseer spinning. 20 years experience on all numbers and colors. Can come on short notice. First class references. No. 4692.

WANT position as superintendent of weave mill Long experience in good mills. Understand economical production of quality goods. Prefer mill in the Carolinas, Georgia or Alabama. Special experience on ducks and chambrays. No. 4693.

WANT position as overseer weaving on plain cam weave Have been overseer for four years Married good character, good references. No. 4694.

WANT place as overhauler in card room. Can give excellent references from mills in which I have done this work and can give satisfaction in every respect. No. 4695

WANT position as overseer carding or assistant superintendent. Prefer mill on white goods Age 26, single, 9 years experience Now overseer and night superintendent. No. 4696.

WANT position as master mechanic. Now employed, good reasons for wishing to change Large job preferred. Good references. No. 4697.

WANT position as overseer spinning, or spooling, winding and twisting. Now employed but wish larger place. Long experience and good references. No. 4698.

WANT position as superintendent of medium size mill or overseer carding or spinning in larger plant. Now employed as assistant superintendent. Good references. No. 4699.

WANT position as superintendent of yarn mill. Long practical experience as superintendent and overseer and have excellent record. No. 4700.

WANT position as overseer carding or would take overseer's place in large place in large mill. Experienced man of character and ability who can give satisfaction. No. 4701.

WANT position as superintendent. Experienced on both colored and white goods, also fancies. Fine references. No. 4702.

WANT position as carder, spinner, or twister room man. Good habits, long experience and references to show character and ability. No. 4703.

WANT position as master mechanic. Number of years experience in mill steam plant and machine shop. Have first grade Fulton County (Ga.) engineer's license. No. 4704.

WANT position as carder or spinner. Have long experience in number of first class mills and can give excellent references. No. 4705.

WANT position as dyer, bleacher or in charge of mercerization. Have had 15 years experience in warp and skein work in some of the finest mills in the country. Will accept place either as superintendent or overseer. No. 4706.

WANT position as superintendent of yarn mill or carder and spinner. Experienced man with long record of successful service. Good references. No. 4707.

WANT position as overseer weaving. Now employed as overseer. Have been with present mill 19 years, 5 years as overseer. Have had 23 years experience in weaving. Want larger and better paying job. No. 4708.

WANT position as overseer weaving, slashing or beaming. Now employed but wish larger place. Will be glad to submit references to mill needing high class man. No. 4709.

WANT positon as overseer weaving or would take second hand in large mill Eighteen years experience as overseer. Now employed but have good reasons for wishing to change. Good references. No. 47010.

WANT position as overseer spinning. Age 34, married, 15 years experience. Can get real results. References. No. 4711.

WANT position as overseer spinning. Now employed, been on present job several years. Would consider permanent job as spindle plumber in large mill. Age 33, married, excellent references. No. 4712.

WANT position as superintendent of yarn mill or overseer carding or spinning. Long experience in good mills, good habits. First class references. No. 4713.

WANT position as superintendent of medium size mill at good pay. Have had 20 years in the mill, unusually good experience in weaving. Now general overseer in large paint. Good references. No. 4714.

WANT position as overseer weaving. Experienced on wide range of goods and can get results. Now employed but can come on short notice. No. 4715.

WANT position as overseer carding or spinning. Nine years as overseer in these departments. Age 37. Best of references. No. 4716.

WANT position as overseer weaving. Want good job in first class mill. Competent man who can get production at low cost. Good manager of help. A-1 references. No. 4717.

WANT position as master mechanic. Experienced on both steam and electric work, good machinist and can handle mill machine shop in first class manner. Excellent references. No. 4718.

MEMPHIS COTTON

*JOSEPH NEWBURGER, President*
*D. W. BROOKS, Vice-President*
*W. H. WILLEY, Vice-President*
*NORMAN MONAGHAN, Secy-Treas.*

NEWBURGER COTTON CO.
(INCORPORATED)

MEMPHIS - TENN.

*Mississippi Delta Cotton our Specialty*

COTTON
*Let Us Quote You*

STEWART BROTHERS COTTON COMPANY
(Incorporated)
of New Orleans, La.
COTTON MERCHANTS
Charlotte, N. C. STAPLES A SPECIALTY Greenville, S. C.

Postal Phone Local Phone 821 Long Distance Phone 9993
S. B. TANNER, JR.
Cotton
CHARLOTTE, N. C.
Representing
NEWBURGER COTTON CO. Memphis, Tenn.
TARVER, STEEL & COMPANY Dallas, Texas

William and York Wilson
Incorporated
Cotton Brokers
Rock Hill, S. C.
Representing reliable shippers throughout the cotton belt.

W. J. BRITTON & CO.
COTTON
RIVERS, BENDERS and STAPLE
105 S. Front St.
Memphis, Tenn, U. S. A.

# CLASSIFIED LIST OF ADVERTISERS

- **Air Conditioners—**
  - American Moistening Co.
  - The Bahnson Co.
  - Carrier Engineering Co.
  - Parks-Cramer Co.
- **Albone—**
  - Roessler & Hasslacher.
- **Artesian Wells—**
  - Virginia Machinery & Well Co., Inc.
- **Architects and Mill Engineers—**
  - Lockwood, Greene & Co.
  - Sirrine & Co., J. E.
- **Ash Handling Equipment—**
  - Link-Belt Co.
- **Automatic Feeds for Cotton—**
  - Saco-Lowell Shops.
  - Whitin Machine Works.
- **Automatic Lint Cleaners—**
  - T. C. Entwistle Co.
- **Automatic Stop Motion—**
  - Eclipse Textile Devices, Inc.
- **Automatic Yarn Cleaner—**
  - Eclipse Textile Devices, Inc.
- **Ball Bearing—**
  - Charles Bond Company
  - Fafnir Bearing Co.
- **Balers—**
  - Economy Baler Co.
- **Baling Presses—**
  - Economy Baler Co.
- **Bands and Tape—**
  - American Textile Banding Co.
- **Baskets—**
  - Charles Bond Company
  - W. T. Lane & Bros.
- **Beaming and Warping Machinery—**
  - Barber-Colman Co.
  - Cocker Machinery & Foundry Co.
  - Draper Corporation.
  - Easton & Burnham Machine Co.
  - T. C. Entwistle Co.
  - Saco-Lowell Shops.
- **Beam Heads—**
  - T. C. Entwistle Co.
- Mossberg Pressed Steel Corp.
  - Saco-Lowell Shops.
- **Beams (Section)—**
  - Washburn.
- **Beams (All Steel)—**
  - T. C. Entwistle Co.
  - Mossberg Pressed Steel Corp.
  - Saco-Lowell Shops.
- **Beaming Combs—**
  - T. C. Entwistle Co.
  - Easton & Burnham Machine Co.
  - Steel Heddle Mfg. Co.
- **Bearings (Roller)—**
  - Charles Bond Company
  - Hyatt Roller Bearing Co.
- **Bearings (Shaft)—**
  - Charles Bond Company
  - Fafnir Bearing Co.
  - Hyatt Roller Bearing Co.
  - William Sellers & Co., Inc.
  - Woods, T. B. & Sons Co.
- **Bearings (Textile Machinery)—**
  - Charles Bond Company
  - Fafnir Bearing Co.
  - Hyatt Roller Bearing Co.
- **Belt Coneyors—**
  - Link Belt Co.
- **Belt Tighteners—**
  - Charles Bond Company
  - Link-Belt Co.
  - Woods, T. B. & Sons Co.
- **Belting—**
  - The Akron Belting Co.
  - Jas. H. Billington Co.
  - Charles Bond Company
  - Charlotte Leather Belting Co.
  - Chicago Belting Co.
  - Druid Oak Belting Co.
  - Slip-Not Belting Corp.
  - Graton & Knight Mfg. Co.
  - E. F. Houghton & Co.
  - Edward R. Ladew Co.
- **Belt Cement—**
  - Charles Bond Company
  - Chicago Belting Co.
  - Edward R. Ladew Co.
  - Graton & Knight Mfg. Co.
  - E. F. Houghton & Co.
- **Belt Dressing—**
  - Charles Bond Company
- **Cling-Surface Co.**
- **Belt Lacing—**
  - Charles Bond Company
  - Chicago Belting Co.
  - Edward R. Ladew Co.
  - E. F. Houghton & Co.
  - Graton & Knight Mfg. Co.
- **Belting (Link)—**
  - Charles Bond Company
  - Link-Belt Co.
- **Bicarbonate of Soda—**
  - Mathieson Alkali Works, Inc.
- **Bleacheries—**
  - Joseph Bancroft & Sons Co.
  - Sayles Finishing Plants, Inc.
- **Bleachers—**
  - Southern Artsilk Bleach & Dye Works, Inc.
- **Bleaching Materials—**
  - Arabol Mfg. Co.
  - Arnold, Hoffman & Co., Inc.
  - L. Sonneborn Sons, Inc.
  - Bosson & Lane.
  - J. B. Ford Co.
  - National Aniline & Chemical Co.
  - Roessler & Hasslacher Chem. Co.
  - United Chemical Products Co.
  - Wolf, Jacques & Co.
- **Bobbin Holders—**
  - Fournier & Lemoine.
- **Bobbins and Spools—**
  - Jas. H. Billington Co.
  - David Brown Co.
  - Courtney, The Dana S. Co.
  - Draper Corporation.
  - Jordan Mfg. Co.
  - Lestershire Spool & Mfg. Co.
  - Lowell Shuttle Co.
  - Mossberg Pressed Steel Corp
  - Walter L. Parker Co.
  - Steel Heddle Mfg. Co.
- **Bobbin Saving Treatment—**
  - The Textilac Co.
- **Boxes—**
  - Wilts Veneer Co.
- **Box Shooks—**
  - Wilts Veneer Co.
- **Blowers and Blower Systems**
  - Carries Engineering Co.
  - Parks-Cramer Co.
- **Breton Mineral Oil—**
  - Borne, Scrysmer Co.
- **Brushes—**
  - Atlanta Brush Co.
  - Curtis & Marble Machine Co.
- **Brushing Machines—**
  - Curtis & Marble Machine Co.
- **Bobbin Stripper—**
  - Terrell Machine Co.
- **Calenders—**
  - H. W. Butterworth & Sons Co.
  - B. F. Perkins & Son, Inc.
  - Textile Finishing Machinery Co.
- **Calender Roll Grinders—**
  - B. S. Roy & Son Co.
- **Cards—**
  - Woonsocket Machine & Press Co., Inc.
  - Saco-Lowell Shops.
  - Whitin Machine Works.
- **Card Clothing—**
  - Ashworth Bros.
  - Charlotte Mfg. Co.
  - Howard Bros. Mfg. Co
- **Card Grinding Machinery—**
  - Easton & Burnham Machine Co.
  - Dronsfield Bros.
  - T. C. Entwistle Co.
  - Roy & Son Co., B. S.
  - Saco-Lowell Shops.
  - Whitin Machine Works.
  - Woonsocket Machine & Press Co., Inc.
- **Carrier Aprons—**
  - Link-Belt Co.
- **Caustic Potash—**
  - A. Klipstein & Co.
- **Caustic Soda—**
  - Arnold, Hoffman & Co. Inc.
  - A. Klipstein & Co.
  - Mathieson Alkali Works, Inc.
- **Chain Belts and Drives—**
  - Charles Bond Company
  - Link-Belt Co.
  - Morse Chain Co.
- **Chemicals—**
  - L. Sonneborn Sons, Inc.
  - J. B. Ford Co.
  - Hart Products Corp.
  - A. Klipstein & Co.
  - Mathieson Alkali Works, Inc.
  - National Oil Products Co.
  - Seydel Chemical Co.
  - Seydel-Woolley Co.
- **Cloth Presses—**
  - Economy Baler Co.
- **Cloth-Winding Paper Cores—**
- **Cores for Cloth-Winding—**
- **Clutches (Friction)—**
  - Charles Bond Company
  - Textile Finishing Machinery Co.
  - Wood's T. B. Sons Co.
- **Cloth Winders and Doublers—**
  - Curtis & Marble Machine Co.
- **Clutch Spindles—**
  - Fournier & Lemoine.
- **Coal Handling Machinery—**
  - Link-Belt Co.
- **Combs—**
  - Steel Heddle Mfg. Co.
- **Combs (Beamers, Warpers, Slashers)—**
  - T. C. Entwistle Co.
  - Easton & Burnham Machine Co.
- **Commission Merchants—**
  - Catlin & Co.
  - J. H. Lane & Co.
  - Mauney-Steel Co.
  - Paulson, Linkroum & Co.
  - Ridley, Watts & Co.
  - The Farish Co.
- **Compressors (Air)—**
  - Allis-Chalmers. Mfg. Co.
- **Condensers—**
  - Allis-Chalmers Mfg. Co.
- **Conditioning Machines—**
  - American Moistening Co.
- **Conduit Fittings—**
  - Chicago Fuse Mfg. Co.
- **Cones (Paper)—**
  - Sonoco Products Co.
- **Cone Vice Couplings—**
  - William Sellers & Co., Inc.
- **Conveying Systems—**
  - Link-Belt Co.
- **Coolers (Air)—**
  - T. B. Wood's Sons Co.
  - ——See Humidifying Apparatus.
  - Sonoco Products Co.
  - Sonoco Products Co.
- **Cotton—**
  - Jackson, Hill & Co.
  - Lesser-Goldman Cotton Co.
  - Lineberger Bros.
  - Sanders, Orr & Co.
  - Stewart Bros. Cotton Co.
  - S. B. Tanner, Jr.
  - Wm. & York Wilson.
- **Cotton Machinery—**
  - Ashworth Bros.
  - Barber-Colman Co.
  - Collins Bros. Machine Co.
  - Crompton & Knowles Loom Works.
  - Dixon Lubricating Saddle Co.
  - Draper Corporation.
  - Fales & Jenks Machine Co.
  - H. & B. American Machine, Inc.
  - T. C. Entwistle Co.
  - Hopedale Mfg. Co.
  - Metallic Drawing Roll Co.
  - National Ring Traveler Co.
  - Roy & Son, B. S.
  - Easton & Burnham Machine Co.
  - Saco-Lowell Shops.
  - Stafford Co., The
  - Universal Winding Co.
  - Whitin Machine Works.
  - Whitinsville Spinning Ring Co.
  - Tolhurst Machine Works.
  - Terrell Machine Co.
  - Southern Spindle & Flyer Co.
  - Woonsocket Machine & Press Co., Inc.
- **Cotton Openers and Lappers—**
  - Saco-Lowell Shops.
  - Whitin Machine Works.
  - Woonsocket Machine & Press Co., Inc.
- **Cotton Softeners—**
  - Arabol Mfg. Co.
  - Arnold, Hoffman & Co., Inc.
  - Bosson & Lane.
  - Hart Products Corp.
  - E. F. Houghton & Co.
  - A. Klipstein & Co.
  - National Oil Products Co.
  - Seydel Chemical Co.
  - Seydel-Woolley Co.
  - L. Sonneborn Sons, Inc.
  - Wolf, Jacques & Co.
- **Cotton Waste Machinery—**
  - Woonsocket Machine & Press Co., Inc.
  - Saco-Lowell Shops.
  - Whitin Machine Works.
- **Counters (Revolution, Hank, Pick, etc)—**
  - The Root Co.
- **Couplings (Shaft)—**
  - Charles Bond Company
  - William Sellers & Co., Inc.
  - Wood's T. B. Sons Co.
- **Cranes—**
  - Link-Belt Co.
- **Dobby Chain—**
  - Crompton & Knowles Loom Works.
  - Rice Dobby Chain Co.
- **Doffing Boxes—**
  - Rogers Fibre Co.
- **Doublers—**
  - Saco-Lowell Shops.
  - Textile Finishing Machinery Co.
  - Universal Winding Co.
- **Drawing Rolls—**
  - Metallic Drawing Roll Co.
- **Dring Fountains—**
  - Puro Sanitary Drinking Fountain Co.
- **Drives (Silent Chain)—**
  - Charles Bond Company
  - Link-Belt Co.
  - Morse Chain Co.
- **Drop Wires—**
  - Crompton & Knowles Loom Works.
  - Draper Corporation.
  - Hopedale Mfg. Co.
  - Mossberg Pressed Steel Corp.
  - R. I. Warp Stop Equipment Co.
- **Dryers (Centrifugal)—**
  - American Laundry Machinery Co.
  - Roy & Son Co., B. S.
  - Tolhurst Machine Works.
- **Dyers—**
  - Southern Artsilk Bleach & Dye Works, Inc.
- **Dyeing, Drying, Bleaching and Finishing Machinery—**
  - Cocker Machinery & Foundry Co.
  - American Laundry Machinery Co.
  - H. W. Butterworth & Sons Co.
  - Franklin Process Co.
  - Klauder-Weldon Dye Machinery Co.
  - Perkins, B. F. & Sons, Inc.
  - Textile Finishing Machinery Co.
- **Dyestuffs and Chemicals—**
  - Borne, Scrymser Co.
  - Bosson & Lane.
  - E. I. du Pont de Nemours & Co., Inc.
  - General Dyestuff Corp.
  - A. Klipstein & Co.
  - Roessler & Hasslacher Chemical Co.
  - National Aniline & Chemical Co.
  - United Chemical Products Co.
  - Wolf, Jacques & Co.
- **Dye Works—**
  - Franklin Process Co.
  - Sayles Finishing Plants, Inc.
- **Eclipse Van Ness Dyeing Machine—**
  - Eclipse Textile Devices, Inc.
- **Electric Fans—**
  - Allis-Chalmers Mfg Co.
  - General Electric Co.
  - Westinghouse Electric & Mfg. Co.
- **Electric Hoists—**
  - Allis-Chalmers Mfg. Co.
  - Link-Belt Co.
- **Electric Lighting—**
  - Allis-Chalmers Mfg. Co.
  - General Electric Co.
  - Westinghouse Electric & Mfg. Co
- **Electric Motors—**
  - Allis-Chalmers Mfg. Co.
  - Charles Bond Company
  - Fairbanks-Morse Co.
  - General Electric Co.
  - Westinghouse Electric & Mfg. Co.
- **Electric Supplies—**
  - Chicago Fuse Mfg. Co
  - Cooper-Hewitt Electric Co
  - General Electric Co
  - Westinghouse Electric & Mfg. Co.
- **Elevators—**
  - Link-Belt Co.
- **Engineers (Mill)—**
  - ——See Architects and Mill Engineers.
- **Engineers (Ventilating)—**
  - Bahnson Co.
  - Parks-Cramer Co.
- **Engines (Steam, Oil, Gas, Pumping)—**
  - Allis-Chalmers Mfg. Co.
  - Fairbanks, Morse & Co.
  - Sydnor Pump & Well Co.
  - ——See also Ventilating Apparatus.
- **Expert Textile Mechanic—**
  - J. D. Hollingsworth.
- **Extractors—**
  - American Laundry Machine Co.
  - Tolhurst Machine Works.
- **Fences (Iron and Wire)—**
  - Cyclone Fence Co.
  - Page Fence and Wire Products Assn.
- **Fibre Specialties—**
  - Diamond State Fibre Co.
- **Finishers—**
  - Sayles Finishing Plants, Inc.
- **Finishing Compounds—**
  - Arnold, Hoffman & Co., Inc.
  - Borne, Scrymser Co.
  - Hart Products Corp.
  - E. F. Houghton & Co.
  - A. Klipstein & Co.
  - National Oil Products Co.
  - Seydel-Woolley Co.
  - L. Sonneborn Sons Co.
- **Finishing Machinery—**
  - H. W. Butterworth & Sons Co.
  - B. F. Perkins & Son, Inc.
- **Finishing Machinery—**
  - ——See Dyeing, Drying, Bleaching and Finishing.
  - Textile Finishing Machinery Co.
- **Flat Wall Paint—**
  - E. I. du Pont de Nemours & Co., Inc.
- **Flexible Couplings—**
  - T. B. Wood's Sons Co.
- **Floor Stands—**
  - Wood's T. B. Sons Co.
- **Fluted Rolls—**
  - Collins Bros. Machine Co.
  - Fales & Jenks Machine Co.
  - Woonsocket Machine & Press Co., Inc.
  - Whitin Machine Works.
- **Flyer Pressers and Overhaulers—**
  - Southern Spindle & Flyer Co.
  - Whitin Machine Works.
  - Woonsocket Machine & Press Co., Inc.
- **Flyers—**
  - Saco-Lowell Shops.
  - Southern Spindle & Flyer Co.
  - Whitin Machine Works.
- **Frames—**
  - Steel Heddle Mfg. Co.
- **Friction Clutches—**
  - Wood's T. B. Sons Co.
  - See Clutches.
- **Fuses —**
  - Chicago Fuse Mfg. Co.
- **Gearing (Silent Flexible)—**
  - Link-Belt Co.
- **Gears—**
  - Charles Bond Company
  - Dan Gear Co.
  - Ferguson Gear Co.
- **Gears-Silent—**
  - Charles Bond Company
  - Ferguson Gear Co.
- **Gear Makers—**
  - Charles Bond Company
  - Ferguson Gear Co.
- **Grate Bars—**
  - Thomas Grate Bar Co.
- **Grab Buckets—**
  - Link-Belt Co.
- **Greases—**
  - N. Y. & N. J. Lubricant Co.
  - L. Sonneborn Sons, Inc.
- **Grinding and Polishing Machines—**
- **Gudgeon Rolls—**
  - Washburn.
  - Easton & Burnham Machine Co.
  - Roy, B. S. & Son Co.
- **Hangers (Ball and Socket)—**
  - Charles Bond Company
  - William Sellers & Co., Inc.
  - T. B. Wood's Sons Co.

# CLASSIFIED LIST OF ADVERTISERS

**Hangers (Shaft)—**
Charles Bond Company
Fafnir Bearing Co.
Hyatt Roller Bearing Co.
William Sellers & Co., Inc.
Wood's T. B. & Sons Co.
**Hardware Supplies—**
Textile Mill Supply Co.
**Harness Twine—**
Garland Mfg. Co.
**Harness and Frames—**
——See Heddles and Frames.
**Heddles and Frames—**
Garland Mfg. Co.
Steel Heddle Mfg. Co.
L. S. Watson Mfg. Co.
**Hopper-Feed Hand Stokers—**
The J. H. Williams Co.
**Hosiery Dyeing Machinery—**
American Laundry Machinery Co.
Cocker Machinery & Foundry Co.
**Humidity and Air Conditioning Aparatus—**
American Moistening Co.
The Bahnson Co.
Carrier Engineering Co.
Parks-Cramer Co.
**Humidity Controller—**
American Moistening Co.
The Bahnson Co.
Carrier Engineering Corp.
Parks-Cramer Co.
**Hydro-Extractors—**
American Laundry Machinery Co.
Tolhurst Machine Co.
**Indigo Deing Machinery—**
H. W. Butterworth & Sons Co.
Cocker Machine & Foundry Co.
**Textile Finishing Machinery Co.**
**Insurance—**
Firemen's Mutual Insurance Co.
Liberty Mutual Insurance Co.
**Knit Goods Finishing Machines—**
Kaumagraph Co.
Merrow Machine Co., The.
**Knotters—**
Barber-Colman Co.
Merrow Machine Co.
**Knitting Lubricants—**
National Oil Products Co.
**Laundry Machinery—**
Tolhurst Machine Works.
**Landscape Architect—**
E. S. Draper.
**Leather Packings—**
Charles Bond Company
Chicago Belting Co.
Edward R. Ladew Co.
E. F. Houghton & Co.
Graton & Knight Mfg. Co.
**Leather Loom Pickers—**
Charles Bond Company
E. H. Jacobs Mfg. Co.
**Leather Strapping—**
Charles Bond Company
Edward R. Ladew Co.
Graton & Knight Mfg. Co.
E. F. Houghton & Co.
**Leather Straps—**
E. H. Jacobs Mfg. Co.
**Lift Trucks—**
**Plimpton Lift Truck Corp.**
**Liquid Chlorine—**
Arnold, Hoffman & Co., Inc.
Mathieson Alkali Works, Inc.
**Looms—**
Crompton & Knowles Loom Works.
Draper Corporation.
Hopedale Mfg. Co.
Stafford Co., The.
**Loom Beams and Heads—**
Mossberg Pressed Steel Corp.
**Loom Drop Wires—**
Crompton & Knowles Loom Works.
Hopedale Mfg. Co.
Mossberg Pressed Steel Corp.
Steel Heddle Mfg. Co.
R. I. Warp Stop Equipment Co.
**Loom Harness—**
Atlanta Harness & Reed Mfg. Co.
Garland Mfg. Co.
High Point Loom Reed & Harness Co.
Steel Heddle Mfg. Co.
**Loom Pickers—**
Jas. H. Billington Co.
Charles Bond Company
Edward R. Ladew Co.
E. H. Jacobs Mfg. Co.
Garland Mfg. Co.
Graton & Knight Mfg. Co.
**Loom Reeds—**
Atlanta Harness & Reed Mfg. Co.
Greensboro Loom Reed Co.
High Point Loom Reed & Harness Co.
Steel Heddle Mfg. Co.
**Loom Supplies—**
Charles Bond Company
E. H. Jacobs Mfg. Co.
**Lubricants—**
Borne, Scrymser & Co.
E. F. Houghton & Co.
N. Y. & N. J. Lubricant Co.
L. Sonneborn Sons, Inc.
**Lubricators—**
Malcolm H. Smith Co., Inc.
**Lug Straps—**
Charles Bond Company
E. H. Jacobs Mfg. Co.
**Machinery Enamel—**
E. I. du Pont de Nemours & Co., Inc.
**Mangles—**
American Laundry Machinery Co.
H. W. Butterworth & Sons Co.
**Textile Finishing Machinery Co.**
**Markers—**
Kaumagraph Co.
Merrow Machine Co.
**Measuring and Folding Machines—**
Cocker Machinery & Foundry Co.
Curtis & Marble Machine Co.
**Textile Finishing Machinery Co.**
**Mercerizing Machinery—**
Cocker Machinery & Foundry Co.
H. W. Butterworth & Sons Co.
**Textile Finishing Machinery Co.**
**Metal Paint—**
E. I. du Pont de Nemours & Co., Inc.
**Metallic Rolls—**
Metallic Drawing Roll Co.
**Meters—**
Allis-Chalmers Mfg. Co.
General Electric Co.
Westinghouse Electric & Mfg. Co.
**Mill Architects—**
——See Architects.
**Mill Lighting—**
——See Electric Lighting.
**Mill Starches—**
Arnold, Hoffman & Co., Inc.
Jas. H. Billington Co.
Corn Products Refining Co.
Penick & Ford, Ltd.
Keever Starch Co.
Stein, Hall & Co.
**Mill Supplies—**
Charles Bond Company
Dixon Lubricating Saddle Co.
E. H. Jacobs Mfg. Co.
Garland Mfg. Co.
Textile Mill Supply Co.
Thomas Grate Bar Co.
**Mill White—**
E. I. du Pont de Nemours & Co., Inc.
Oliver Johnson & Co.
**Napper Roll Grinders—**
B. S. Roy & Son Co.
Allis-Chalmers Mfg. Co.
General Electric Co.
Westinghouse Electric & Mfg. Co.
**Oils—**
Arnold, Hoffman & Co., Inc.
E. F. Houghton & Co.
A. Klipstein & Co.
National Oil Products Co.
N. Y. & N. J. Lubricant Co.
L. Sonneborn Sons, Inc.
Wolf, Jacques & Co.
**Oil Burners—**
**Scott-Newman Oil Burner Co.**
**One-Piece Furnace Linings—**
The Cornish Co.
**Opening Machinery—**
H. & B. American Machine Co.
Saco-Lowell Shops.
Whitin Machine Works.
**Overhaulers—**
Saco-Lowell Sohps .
American Laundry Machinery Co
**Overseaming and Overedging Machines—**
Southern Spindle & Flyer Co.
**Paints—**
E. I. du Pont de Nemours & Co., Inc.
Aluminum Co. of America.
Oliver Johnson & Co.
Tripod Paint Co.
**U. S. Gutta Percha Paint Co.**
**Patents—**
Siggers & Siggers.
**Perborate of Soda—**
Roessler & Hasslacher Chemical Co.
**Picker Gears—**
Cocker Machinery & Foundry Co.
**Pickers (Leather)—**
Charles Bond Company
Edward R. Ladew Co.
E. F. Houghton & Co.
E. H. Jacobs Mfg. Co.
Garland Mfg. Co.
Graton & Knight Mfg. Co.
**Picker Sticks—**
Charles Bond Company
Garland Mfg. Co.
**Piece Dyeing Machinery—**
H. W. Butterworth & Sons Co.
Cocker Machinery & Foundry Co
**Textile Finishing Machinery Co.**
**Pipe and Fittings—**
Parks-Cramer Co.
**Portable Elevators—**
Link-Belt Co.
**Power Transmission Machinery—**
Allis-Chalmers Mfg. Co.
Charles Bond Company
Hyatt Roller Bearing Co.
Fafnir Bearing Co.
Link-Belt Co.
Morse Chain Co.
William Sellers & Co., Inc.
Wood's, T. B. Sons Co.
**Preparatory Machinery (Cotton)—**
H. & B. American Machine Co.
Saco-Lowell Shops.
Whitin Machine Works.
Woonsocket Machine & Press Co., Inc
**Pickers and Lappers—**
Whitin Machine Works.
Woonsocket Machine & Press Co., Inc.
**Pinboards—**
Washburn.
**Porcelain Guides and Parts—**
Page-Madden Co., Inc.
**Presses—**
Economy Baler Co.
Saco-Lowell Shops.
**Pulleys (Cast Iron)—**
Charles Bond Company
William Sellers & Co., Inc.
Wood's, T. B. Sons Co.
**Pumps—**
**Blackmer Rotary Pump Co.**
**Pumps (Boiler Feed; also Centrifugal)—**
Allis-Chalmers Mfg. Co.
Fairbanks, Morse & Co.
Sydnor Pump & Well Co.
**Peroxide of Sodium—**
Roessler & Hasslacher.
**Presses—**
American Laundry Machinery Co.
Collins Bros.
**Pumps—**
Virginia Machinery & Well Co., Inc.
**Quill Boards—**
Washburn.
**Quillers—**
Crompton & Knowles Loom Works.
Universal Winding Co.
Whitin Machine Works.
**Quill Cleaners—**
Terrell Machine Co.
**Ready Built Homes—**
The Minter Homes Co.
**Receptacles—**
Economy Baler Co.
Rogers Fibre Co.
**Reels—**
Cocker Machinery & Foundry Co.
H. W. Butterworth & Sons Co.
**Ring Spinning Frames—**
Fales & Jenks Machine Co.
H. & B. American Machine Co.
**Textile Finishing Machinery Co.**
Whitin Machine Works.
Saco-Lowell Shops.
**Ring Travelers—**
Dary Ring Traveler Co.
National Ring Traveler Co.
Victor Ring Traveler Co.
U. S. Ring Traveler Co.
**Rolls—**
H. W. Butterworth & Sons Co.
Collins Bros. Machine Co.
Fales & Jenks Machine Co.
The Whitin Machine Works.
Woonsocket Machine & Press Co., Inc.
Saco-Lowell Shops.
Southern Spindle & Flyer Co.
**Textile Finishing Machinery Co.**
**Rolls (Wood)—**
Washburn.
**Roller Bearings—**
Charles Bond Company
Fafnir Bearing Co.
Hyatt Roller Bearing Co.
**Roller Cloth—**
Best, Edward H. & Co.
**Roving Cans and Boxes—**
Denison Mfg. Co.
Rogers Fibre Co.
**Roving Machinery—**
Whitin Machine Works.
Woonsocket Machine & Press Co., Inc.
Saco-Lowell Shops.
**Saddles—**
Dixon Lubricating Saddle Co.
**Sanitary Equipment—**
Vogel Co., Joseph A.
**Sanitary Fountains—**
——See Drinking Fountains.
**Scallop Machines—**
Merrow Machine Co.
**Scouring Powders—**
Bosson & Lane.
Ford, J. B. Co.
National Oil Products Co.
**Scrubbing and Cleaning Powders—**
The Denison Mfg. Co.
**Sesquicarbonate of Soda—**
Mathieson Alkali Works, Inc.
**Section Beam Heads—**
Mossberg Pressed Steel Corp.
**Selling Agents—**
Woodward, Baldwin & Co.
Deering, Milliken & Co.
Reeves Bros.
**Selling Agents (Cotton Goods)—**
Amory, Browne & Co.
Curran & Barry.
Deering, Milliken & Co.
W. H. Langley & Co.
Leslie, Evans & Co.
Reeves Bros.
Wellington, Sears & Co.
**Sewing Machines—**
Merrow Machine Co.
**Sewing Machines and Supplies—**
Curtis & Marble Machine Co.
**Shafting, Hangers, Etc.**
——See Power Transmission Machinery
**Shafting—**
Fafnir Bearing Co.
William Sellers & Co., Inc.
Wood's T. B. Sons Co.
**Shell Rolls—**
Washburn.
**Shell Stitch Machines—**
Merrow Machine Co.
**Short Center Drives—**
T. B. Wood's Sons Co.
**Shuttles—**
Jas. H. Billington Co.
Dald Brown Co.
Lowell Shuttle Co.
Draper Corporation.
Hopedale Mfg. Co.
Shambow Shuttle Co.
L. S. Watson Mfg. Co.
The J. H. Williams Co.
U. S. Bobbin & Shuttle Co.
**Silk Yarns (Artificial)—**
American Cellulose & Chemical Mfg. Co.
Duplan Silk Corp.
Industrial Fibre Co.
**Silent Chain Drive—**
Link-Belt Co.
Morse Chain Co.
**Singeing Machinery—**
H. W. Butterworth & Sons Co.
**Textile Finishing Machinery Co.**
**Sizing Starches, Gums—**
Arnold, Hoffman & Co., Inc.
Arabol Mfg. Co.
Hart Products Corp.
L. Sonneborn Sons, Inc.
Stein, Hall & Co.
**Sizing Compounds—**
Arnold, Hoffman & Co., Inc.
Bosson & Lane
Corn Products Refining Co.
Drake Corp.
Hart Products Corp.
A. Klipstein & Co.
National Oil Products Co.
United Chemical Products Co.
John P. Marston & Co.
H. A. Metz & Co., Inc.
Seydel Chemical Co
Seydel-Woolley Co.
L. Sonneborn Sons, Inc.
Wolf, Jacques & Co.
**Slashers Combs—**
Easton & Burnham Machine Co.
T. C. Entwistle Co.
High Point Loom Reed & Harness Co.
Steel Heddle Mfg. Co.
**Textile Finishing Machinery Co.**
**Softeners (Cotton)—**
Arabol Mfg. Co.
Arnold, Hoffman & Co., Inc.
Bosson & Lane.
E. F. Houghton & Co.
Metz, H. A. & Co., Inc.
Seydel Chemical Co., The.
L. Sonneborn Sons, Inc.
United Chemical Products Corp.
U. S. Bobbin & Shuttle Co.
Wolf, Jacques & Co
**Softeners—**
Arnold, Hoffman & Co., Inc.
Borne, Scrymser Co.
E. F. Houghton & Co.
Seydel-Woolley Co.
**L. Sonneborn Sons Co.**
**Skewers—**
Dald Brown Co.
Courtney, The Dana S. Co.
T. C. Entwistle Co.
Jordan Mfg. Co.
Walter L. Parker Co.
U. S. Bobbin & Shuttle Co.
**Slashers and Equipment—**
Saco-Lowell Shops.
**Soaps—**
Arabol Mfg. Co.
Arnold, Hoffman & Co., Inc.
A. Klipstein & Co.
National Oil Products Co.
L. Sonneborn Sons, Inc.
United Chemical Products Co.
**Soda Ash—**
J. B. Ford Co.
Mathieson Alkali Works, Inc.
**Softeners (Oil)—**
Bosson & Lane.
E. F. Houghton & Co.
Hart Products Corp.
National Oil Products Co.
L. Sonneborn Sons, Inc.
**Solozone—**
Roessler & Hasslacher Chemical Co.
**Spindles—**
Collins Bros. Machine Co.
Draper Corporation.
Easton & Burnham Machine Co.
Fales & Jenks Machine Co.
Saco-Lowell Shops.
Whitin Machine Works
Southern Spindle & Flyer Co.
Woonsocket Machine & Press Co., Inc
**Spindle Repairers—**
Collins Bros. Co.
Fournier & Lemoine.
Fales & Jenks Machine Co.
Southern Spindle & Flyer Co.
**Spinning Frame Saddles—**
Dixon Lubricating Saddle Co.
**Spinning Frame Top Rolls (Wood)—**
Washburn.
**Spinning Rings—**
Collins Bros. Machine Co.
Draper Corporation.
Fales & Jenks Machine Co.
Pawtucket Spinning Ring Co.
Saco-Lowell Shops.
Whitin Machine Works.
Whitinsville Spinning Ring Co.
**Spools—**
—David Brown Co.
Courtney, The Dana S. Co.
Jordan Mfg. Co.
Lestershire Spool & Mfg. Co.
Steel Heddle Mfg. Co.
U. S. Bobbin & Shuttle Co.
Walter L. Parker Co.
**Sprockets—**
Cocker Machinery & Foundry Co.
**Sprockets, Silent Chain—**
Link-Belt Co.
**Spoolers—**
Draper Corporation.
Easton & Burnham Machine Co.

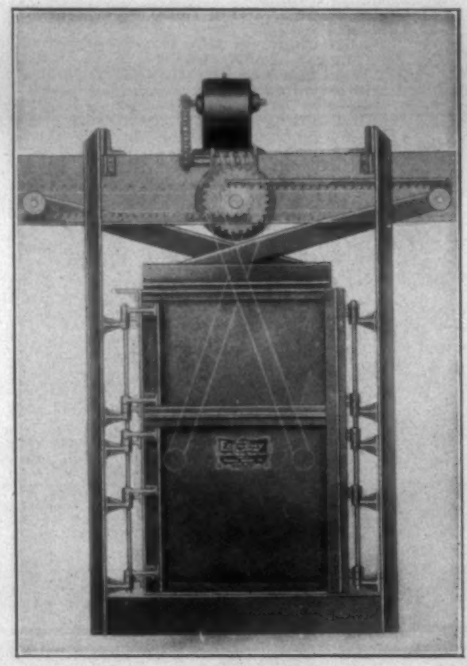
# CLASSIFIED LIST OF ADVERTISERS

  - Saco-Lowell Shops.
  - Whitin **Machine Works.**
- **Spinning Tapes—**
  - American Textile Banding Co.
  - Barber Mfg. Co.
  - Georgia Webbing & Tape Co.
- **Squeeze Rolls—**
  - H. W. Butterworth & Sons Co.
  - Cocker Machine & Foundry Co.
  - **Textile Finishing Machinery Co.**
- **Starch—**
  - Arnold, Hoffman & Co., Inc.
  - Corn Products Refining Co.
  - Keeer Starch Co.
  - Penick & Ford, Ltd.
  - Stein, Hall & Co.
- **Stencil Machines—**
  - A. J. Bradley Mfg. Co.
- **Stencil Papers—**
  - A. J. Bradley Mfg. Co.
- **Stripper Cards—**
  - L. S. Watson Mfg. Co.
- **Switch Boxes—**
  - Chicago Fuse Mfg. Co.
- **Tanks—**
  - H. W. Butterworth & Sons Co.
  - **Textile Finishing Machinery Co.**
- **Tape—**
  - Georgia Webbing & Tape Co.
- **Temperature Regulators—**
  - **American Schaeffer & Budenberg Corp.**
- **Textile Castings—**
  - H. W. Butterworth & Sons Co.
  - Cocker Machinery & Foundry Co.
  - **Textile Finishing Machinery Co.**
- **Textile Machinery Specialties—**
  - H. W. Butterworth & Sons Co.
  - Cocker Machine & Foundry Co.
  - Hyatt Roller Bearing Co.
  - **Textile Finishing Machinery Co.**
- **Textile Soda—**
  - J. B. Ford Co.
  - Mathieson Alkali Co.
- **Temples—**
  - Draper Corporation.
  - Hopedale Mfg. Co.
- **Textile Apparatus (Fabrics)—**
  - B. F. Perkins & Son, Inc.
  - Henry L. Scott & Co.
- **Textile Dryers—**
  - American Moistening Co.
- **Top Rolls For Spinning Frames—**
  - **Washburn.**
- **Trademarking Machines—**
  - Curtis & Marble Machine Co.
- **Transfer Stamps—**
  - Kaumagraph Co.
- **Transmission Belts—**
  - Jas. H. Billington Co.
  - Charles Bond Company
  - Chicago Belting Co.
  - Slip-Not Belting Corp.
  - Edward R. Ladew Co.
  - E. F. Houghton & Co.
  - Graton & Knight Mfg. Co.
- **Transmission Machinery—**
  - Allis-Chalmers Mfg. Co.
  - Hyatt Roller Bearing Co.
  - William Sellers & Co., Inc.
  - Wood's T. B. & Sons Co.
- **Toilets—**
  - Vogel, Jos. A. Co.
- **Transmission Silent Chain—**
  - Link-Belt Co.
  - Morse Chain Co.
- **Trucks (Mill)—**
  - Diamond State Fibre Co.
  - Rogers Fibre Co.
  - **W. T. Lane & Bros.**
- **Trucks For Pin Boards—**
  - Washburn.
- **Tubes-Fibre—**
  - Diamond State Fibre Co.
- **Tubes (Paper)—**
  - **Sonoco Products Co.**
- **Turbines (Steam)—**
  - Allis-Chalmers Mfg. Co.
- **Twisting Machinery—**
  - Collins Bros. Machine Co.
  - Draper Corporation.
  - Fales & Jenks Machine Co.
  - Saco-Lowell Shops.
  - Whitin Machine Works.
- **Twisting Tapes—**
  - Barber Mfg. Co.
- **Underwear Machines—**
  - Merrow Machine Co.
- **Ventilating Apparatus—**
  - American Moistening Co.
  - Parks-Cramer Co.
- **Ventilating Fans—**
  - B. F. Perkins & Son., Inc.
- **Warpers—**
  - Barber-Colman Co.
  - Cocker Machinery & Foundry Co.
  - Crompton & Knowles Loom Works.
  - Draper Corporation.
  - Easton & Burnham Machine Co.
  - Saco-Lowell Shops.
  - T. C. Entwistle Co.
- **Warp Dressing—**
  - Arnold, Hoffman & Co., Inc.
  - Boson & Lane.
  - Draper Corporation.
  - Hart Products Corp.
  - E. F. Houghton & Co.
  - National Oil Products Co.
  - Seydel-Woolley Co.
  - L. **Sonneborn Sons** Co.
- **Warp Stop Motion—**
  - Draper Corp.
  - Hopedale Mfg. Co.
  - R. I. Warp Stop Equipment Co.
- **Warp Tying Machinery—**
  - Barber-Colman Co.
- **Warper Shell—**
  - Cocker Machinery & Foundry Co.
- **Washers (Fibre)—**
  - Rogers Fibre Co
- **Waste Reclaiming Machinery—**
  - Saco-Lowell Shops
  - Whitin Machine Works
  - Woonsocket Machine & Press Co, Inc
- **Waste Presses—**
  - Economy Baler Co.
- **Water Wheels—**
  - Allis-Chalmers Mfg. Co.
- **Weighting Compounds—**
  - Arabol Mfg. Co.
  - Bosson & Lane.
  - Hart Products Corp.
  - Marston, Jno. P.
  - Metz, H. A.
  - National Oil Products Co.
  - Jacques Wolf & Co.
  - Seydel-Woolley Co.
  - L. Sonneborn Sons, Inc.
- **Well Drillers—**
  - Sydnor Pump and Well Co.
  - Virginia Machinery & Well Co., Inc.
- **Whizzers—**
  - Tolhurst Machine Works.
- **Winders—**
  - Easton & Burnham Machine Co.
  - Saco-Lowell Shops.
  - Universal Winding Co.
- **Windows—**
  - Carrier Engineering Corp.
  - Parks-Cramer Co.
- **Window Guards—**
  - Cyclone Fence Co.
- **Wire Partitions—**
  - Cyclone Fence. Co.
- **Yardage Clocks—**
  - T. C. Entwistle Co.
- **Yarns—**
  - Paulson, Linkroum & Co.
  - Mauney-Steel Co.
- **Yarn Tension Device—**
  - Eclipse Textile Devices, Inc.
- **Yarn Presses—**
  - Economy Baler Co.
- **Yarn Testing Machines—**
  - H. L. Scott & Co.

**ALL STEEL ECONOMY FIRE PROOF YARN PRESS**

**Direct Motor Connected——Completely Inclosed Chambers**

**"JUST WHAT EVERY YARN MILL NEEDS"**



This Economy yarn baling press is unquestionably the last word in baling press development.

Chamber completely inclosed—no openings. The chamber is made up of four sets of doors, so that the ends of the chamber open as well as the sides. The four doors, however, lock at two corners by a very simple locking device.

This new yarn press produces a bale 36" long by 24 wide, of 12 to 15 cubic feet, weighing about four hundred pounds and over, making it possible to produce bales 24 to 36 inches deep, weighing from two hundred and fifty to four hundred pounds and over. Chamber five feet deep. Equipped with a directly connected electric motor capable of pulling up to 10 horse torque, alternating current 2 or 3 phase, 50 or 60 cycle, 220 or 550 volt.

The end doors as well as the sides, swing out independently, leaving all four sides of the bale exposed.

We should like very much indeed to confer with you regarding this Economy yarn press, and assure you that you would receive satisfactory service. The users of press are well satisfied with this yarn press, because it is convenient to load with great pressure and rapid in operation. Very substantially constructed.

**ECONOMY BALER CO.**

**Ann Arbor, Mich**
**Dept. S. T.**

B C
TRADE MARK

**WARP TYING MACHINES HAND KNOTTERS**
**WARP DRAWING MACHINES**
**AUTOMATIC SPOOLERS HIGH SPEED WARPERS**

**BARBER-COLMAN COMPANY**

BOSTON, MASS. GREENVILLE, S.C.
MAIN OFFICE AND FACTORY:
ROCKFORD, ILL. U. S. A.

**Ashworth Brothers, Inc.**

**Tempered and Side Ground Card Clothing**

TOPS RECLOTHED LICKERINS REWOUND COTTON MILL MACHINERY REPAIRED

For Prompt Service send your Top Flats to be reclothed and your Lickerins to be rewound to our nearest factory. We use our own special point hardened lickerin wire

**Graham and Palmer Sts., Charlotte, N. C.**

44-A Norwood St., Greenville, S. C.
**127 Central Avenue, Atlanta, Ga.**

UCPC

Specify
"UCP" on your
Requisitions

These Products are the Reliable Standards of Uniformity Demanded by the Leading Textile Mills

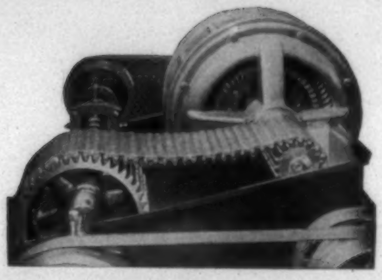
Dyestuffs Softeners

Sizes Oils Chemicals

UNITED CHEMICAL PRODUCTS CORPORATION

*Importers, Exporters and Manufacturers*

York & Colgate Sts. Jersey City, N. J.
Southern Office 307 Commercial National Bank Building Charlotte, N. C.
Pawtucket, R. I. Norwalk, Conn.
Chicago, Ill.



MORSE
Textile Chain Drives

MORSE CHAIN CO., ITHACA, N. Y., U. S. A.

*There is a Morse Engineer near you*

ATLANTA, GA.
BALTIMORE, MD.
BIRMINGHAM ALA.
BOSTON, MASS.
CHARLOTTE, N. C.
CHICAGO, ILL.
CLEVELAND, OHIO
DENVER, COLO.
DETROIT, MICH.
LOUISVILLE, KY.
MINNEAPOLIS, MINN.
NEW ORLEANS, LA.
NEW YORK CITY, N. Y.
OMAHA, NEB.
PITTSBURGH, PA.
SAN FRANCISCO, CALIF.
ST. LOUIS, MO.
TORONTO, ONT., CAN.
WINNIPEG, MAN., CAN.

MORSE SILENT CHAIN DRIVES

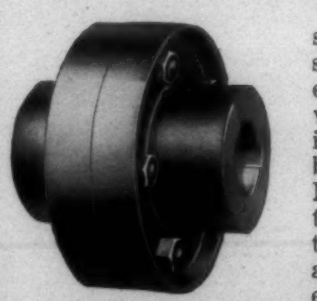
THE MORSE "ROCKER JOINT"

PULLEYS HANGERS

The T. B. WOOD SONS CO. Line

CLUTCHES COUPLINGS

FLANGE OR PLATE COUPLINGS



Designed to withstand severe lineshaft service. Flanged to protect the workman from being caught on the bolt heads or nuts. Machined all over to template, making them interchangeable and therefore easily duplicated.

*Interchangeability* is a feature that has made THE T. B. WOOD SONS CO. LINE of Power Transmissionary Machinery the standard in so many of the country's largest plants. Catalogue on request.

T. B. Wood's Sons Co
CHAMBERSBURG, PA
Greenville, S. C. Cambridge, Mass.

Motor Pulleys Flexible Couplings, Speed Reducers and the U. G. Automatic Belt Contactor for Short Center Drives.

POWER TRANSMITTING MACHINERY

FIG. 20.
Oblong Basket

LANE
Patent Steel Frame
Canvas Mill Baskets

Combine utmost durability with perfect protection to contents.

Made of extra strong Lane woven canvas with the Lane Patented indestructible spring steel frame with renewable hardwood shoes and cross supporting slats.

W. T. Lane & Brothers

*Originators and Manufacturers of Canvas Baskets for 25 years*

Poughkeepsie, N. Y.

**Detroit Graphite Company**

**DETROIT U. S. A.**

**DEGRACO PAINTS**
All Colors for Your Particular Needs

Sta-White—Interior White Paint that stays white.
Building & House Paints for the mill and village.
Superior Graphite Paint—for the prevention of rust.
Brick & Concrete Paints.

Offices and Warehouse Stocks in all Principal Cities

**RAYON MACHINERY**

**Complete Equipment For Manufacturing, Processing and Finishing**

***including the following well known lines:***

**The Max Ams Chemical Engineering Corporation**
**Paterson, N. J.**
Manufacturers of Artificial Silk Machinery and Accessories; Complete Laboratory Units to Process Artificial Silk.

**The Sipp Machine Company**
**Patterson, N. J.**
Manufacturers of Winders, Quillers, Raschel Warpers and other Silk Machinery.

**Charles B. Johnson**
**Paterson, N. J.**
Manufacturers of Silk Finishing, Dyeing and Sizing Machinery.

**Van Vlaanderen Machine Co.**
**Paterson, N. J.**
Manufacturers of a Complete Line of Finishing Machinery, including Dyeing, Drying and Tentering.

*Complete Information and Descriptive Literature Gladly Furnished on Request*

**G. G. SLAUGHTER**
**Southern Agent**
**1016 Johnston Building** **Charlotte, N. C.**